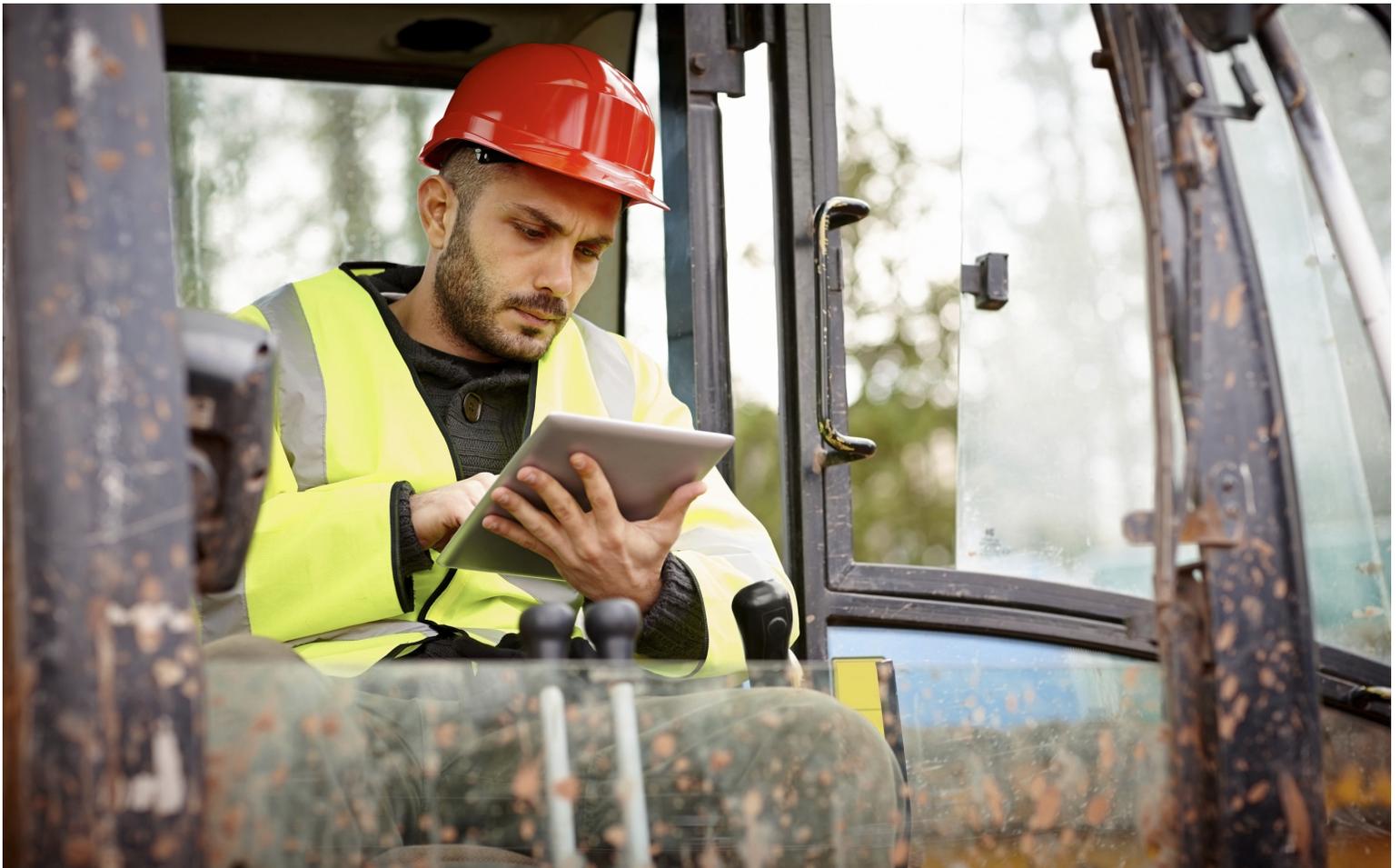


Sage 300 Construction and Real Estate

*Sage SQL Replicator and  
Sage Construction Central Setup Guide*

**This version of the software  
has been retired**

Certified course curriculum



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12/2017

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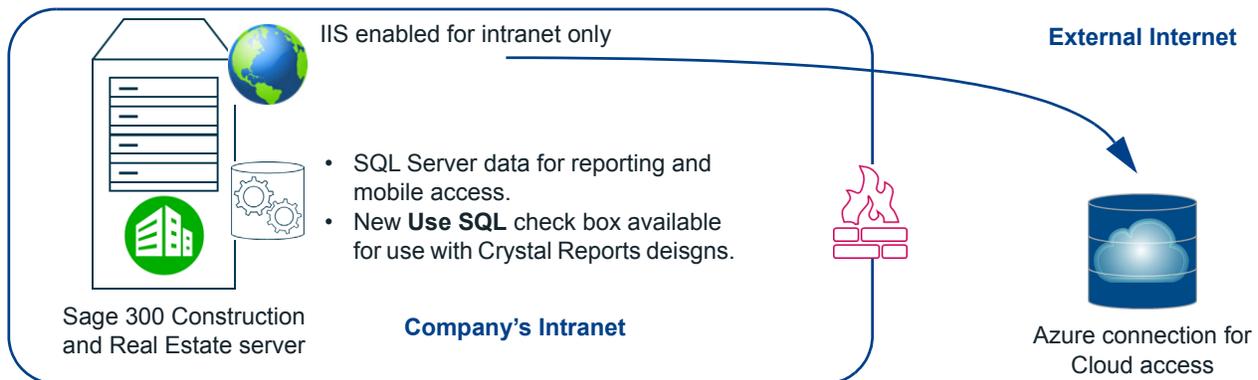
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# About SQL Replicator and Sage Construction Central

Welcome to SQL Replicator and Sage Construction Central—the new Sage 300 Construction and Real Estate tools that take your business to the Cloud. SQL Replicator lays the foundation for secure, convenient access to your project data from anywhere, using a mobile device. Over time we'll add more mobile functionality, giving you access to the reporting and business-intelligence capabilities of Microsoft SQL Server, all from the Cloud.

Once you configure replication, SQL Replicator copies your Sage 300 Construction and Real Estate data from the Pervasive database management system into a SQL Server database. The replicated data includes your Purchasing, Inventory, and Service Management data if you use those products. With daily processing in Sage 300 Construction and Real Estate (either in your accounting office or the Cloud) data is synchronized nearly instantaneously, for up-to-the-minute information wherever you are.

Now, when you run Crystal Reports report designs from Sage 300 Construction and Real Estate, you can select the **Use SQL** check box to run the report from the SQL Server data rather than the Pervasive data. In many cases this results in better report performance.



## About this guide

This reference guide provides the setup and configuration you need to configure replication in System Administrator and use Sage Construction Central. The material applies to system administrators or information technology specialists who will complete the server configuration tasks.

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# Review system requirements

Installing SQL Replicator to use with Sage 300 Construction and Real Estate adds to the demands on your server resources. You can find the technical recommendations for the accounting server in the Sage Support Knowledgebase article [System Requirements: Sage 300 Construction and Real Estate 17.1](#). You should also read the white paper [System Recommendations for 17.1](#) for a more detailed discussion about hardware resources. Review this information carefully and plan for necessary upgrades before installing version 17.1.

## Server hardware

Starting with the 2017 release, your accounting server should have at least 16 GB RAM and a suitable processor. Your data should be stored on SSD hard drives with ample free space. Before you install Sage 300 Construction and Real Estate 17.1 with SQL Replicator, make sure your accounting server fully meets these requirements.

## Microsoft SQL Server

SQL Replicator requires a dedicated instance of SQL Server 2016 SP1. This instance can be installed on the accounting server or on a different server. Sage SQL Installer can install and configure the instance for you, either on your accounting server or on a different server, using the **Advanced** option. We recommend that you take advantage of this utility for quick and easy SQL Server setup. Instructions are provided on page 11.



**WARNING:** You may use the Express edition of SQL Server, but this no-cost option brings limitations on CPU and RAM usage. Individual databases can be no larger than 10 GB, although you can have as many databases as needed. See this [Microsoft article](#) for more information.

## Server environment

In order to use SQL Replicator and Sage Construction Central, your server must run on Windows Server 2012 R2 or Windows Server 2016. (Earlier versions are supported only if you will not use SQL Replicator.) As of version 17.1, 32-bit operating systems are not supported.

If you use a standalone environment, you can use Windows 8.1 or Windows 10.

The server must also have .NET 3.5 and .NET 4.6.2 (or greater) installed. The installation process will attempt to install these for you, but a separate installation might be required for some servers.

## Network environment

Internet access is required for licensing and entitlement of your accounting server. (If you need to activate your license without connecting your server to the internet, call Sage Support to request off-line validation.) Once your product is registered, your server does not need continual access to the internet unless you will access Sage Construction Central or custom reports from the Cloud. Your accounting server must run in a Windows Active Directory domain. In order to access data from the Cloud, Sage 300 Construction and Real Estate users will need to be mapped to Windows domain users. (This guide explains how to do that.)



**NOTE:** The AzureAD domain, which is provided on some computers for access to Azure Active Directory, is not supported. Your computer needs to be on a non-Azure, Windows Active Directory domain in order for SQL Replicator to function properly.

## Azure Active Directory account

In order to access your Sage Construction Central site from the field, you'll need a single license of a Basic Azure Active Directory account. Sage provisions this account for you as part of your subscription to Sage Construction Central. Once your account is set up, configure it for Sage Construction Central by following the instructions in "Set up Azure Active Directory for Sage Construction Central" on page 25.

## Warning: Upgrading to versions using SQL Replicator



Until version 16.1 of Sage 300 Construction and Real Estate, you used File Tools or another utility to back up and restore your data folders. Once you install Sage 300 Construction and Real Estate 17.1 with SQL Replicator and Sage Construction Central, you will no longer be able to restore backups made using File Tools or other third party utilities.

Starting with 17.1, you'll need to use the new System Administrator utility to configure and run your regular backups. This is because restoring a Sage 300 Construction and Real Estate backup requires not only the files in your data folders, but also files and registry keys from numerous areas in your server environment. With the addition of the SQL Server database and Sage Construction Central website, these additional components are critical to your ability to successfully restore from a backup. Without them, your data cannot be restored.

Before you upgrade to version 17.1, be sure to inform any member of your organization who is involved with backing up and restoring Sage 300 Construction and Real Estate data that a new process is required. Work with the team to update your backup and restore procedures to use System Administrator as soon as you upgrade.

This diagram shows the high-level steps required to upgrade to version 17.1 and obtain a backup that can successfully be restored. Each of these are explained in detail in the remainder of this guide.

1. Run File Doctor and back up your 16.1 data folders.



2. Upgrade Sage 300 Construction and Real Estate software to version 17.1. The upgrade could take longer than usual.



3. Upgrade your data folders.



4. Install SQL Server and configure replication in System Administrator.



5. In System Administrator, go to the Backup tab. Configure and run a backup of your 17.1 data folders.



6. Restore the 17.1 backup in a test environment. If successful, store a copy of this backup in a secure, off-site location. This is the only viable copy of your go-live data.



**WARNING:** Starting with version 17.1 of Sage 300 Construction and Real Estate, you must create and restore backups using System Administrator. You will not be able to restore data backups of version 17.1 or later created by File Tools, SQL Server Management Studio, or other commercial utilities. As soon as you upgrade to 17.1, create a backup of your 17.1 go-live data in Sage 300 Construction and Real Estate System Administrator.

# Prepare your accounting server for replication

Once you have verified that your accounting server meets the technical requirements, follow these steps.

1. Run File Doctor on your data folders.
2. Make a backup of your production company folders in your current Sage 300 Construction and Real Estate version, using File Tools or another utility.
3. Upgrade your Sage 300 Construction and Real Estate server, company folders, and clients to version 17.1.



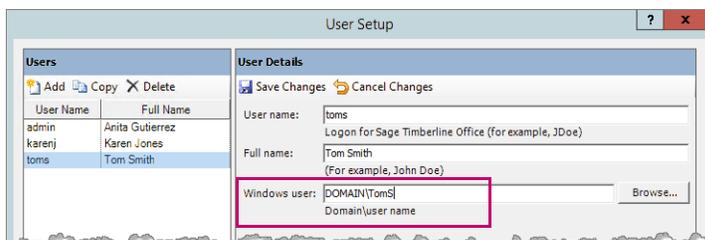
## NOTES:

- Sage 300 Construction and Real Estate 17.1 requires .NET versions 4.6.2 and 3.5. If these versions are not installed on your accounting server, the installation wizard will attempt to install them. Your server will need to be re-started before you can continue.
  - Two Windows services are installed with Sage 300 Construction and Real Estate: the Sage File Expiration Service and the Sage Worker Engine Service. You might see a window related to these services at the end of the upgrade process. If the window does not close on its own, close it to continue setting up your system.
- 
4. In Desktop, select **Options > Security Administration**, and enable security for Sage 300 Construction and Real Estate if it is not already enabled.



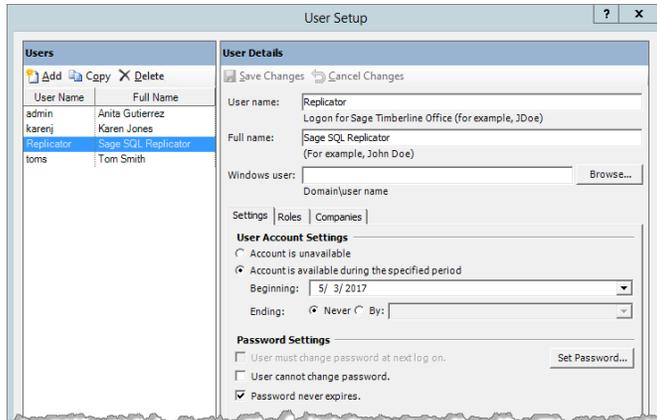
**FOR MORE INFORMATION:** See Sage 300 Construction and Real Estate's Help topics on Security Administration for details about setting up users and roles.

5. Each user who will access replicated data through Sage Construction Central or reports must be set up as a user, with a corresponding Windows domain user name. Complete this setup if needed.



6. Create an additional security user to be used with SQL Replicator.
  - a. Clear the **User must change password** check box.
  - b. Select the **Password never expires** check box.
  - c. Do not associate this account with a Windows user.
  - d. Add the user to each company folder you will replicate (or, create a separate user for each company).
  - e. On the **Roles** tab, assign this user to the **Application Administrator** role.

f. Save and close the **User Setup** window.



7. If you use record or file security, we recommend that you enable access to all files and records for this user to avoid incomplete data replication.

► **Create a domain Windows account to use with replication**



**NOTE:** This step is necessary only if you will install the SQL Server instance on a computer other than the accounting server. You might need an IT specialist to assist with creating this account.

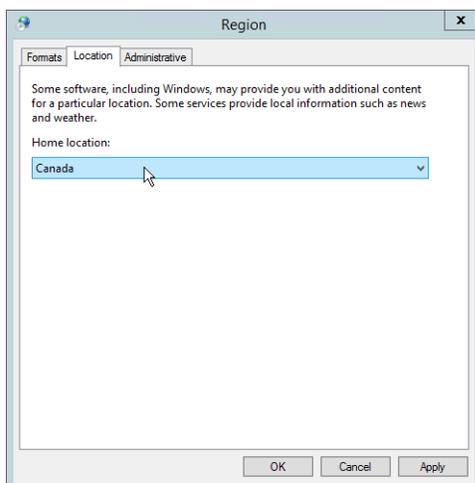
Create a Windows domain account to be used for running replication when SQL Server is installed on a remote computer. Add this account to the following roles and groups:

- The local **Administrators** group on the accounting server.
- The local **Administrators** group on the computer where the SQL Server instance is installed.
- The **sysadmin** server role on the SQL Server instance.

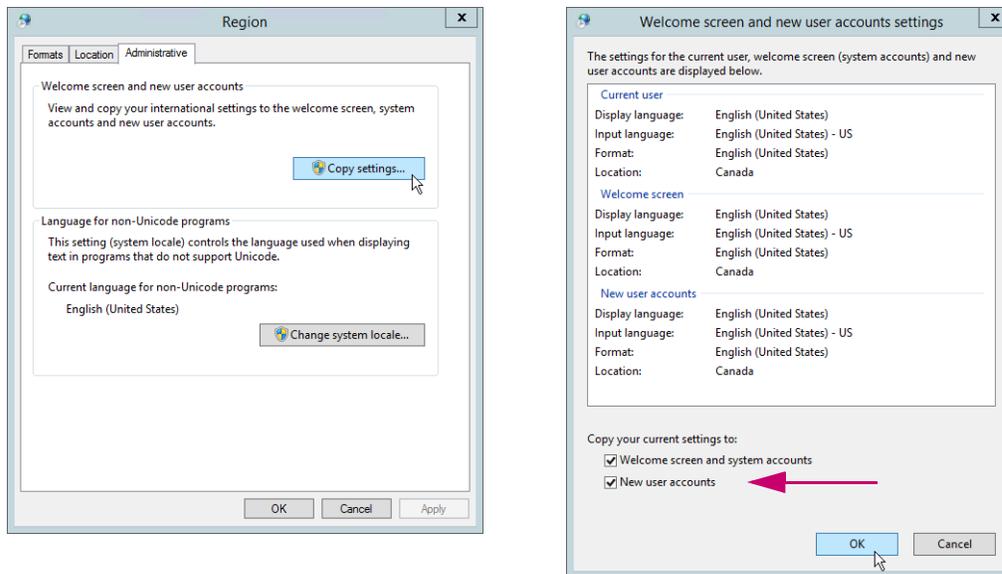
► **About Canadian and Australian installations**

If you are running SQL Replicator on a Canadian or Australian version of Sage 300 Construction and Real Estate, you'll need to provide credentials for a Windows user with **Region** set to Canada or Australia. This enables the country-specific fields in Accounts Payable and Payroll to be replicated. This account must have local administrative privileges on the accounting server, and must also be added to the **sysadmin** SQL Server role when you install SQL Server. These steps are explained in the sections that follow.

1. In the Windows Control Panel, go to **Regions**.
2. On the **Location** tab, verify that the appropriate county is selected. Change it and click **Apply** if needed.



3. On the **Administrative** tab, select the **New user accounts** check box if not already selected, and then click **OK**.



4. Click **OK** again to close the **Region** window.

If you changed the country setting in step 2, you'll need to create a new Windows user so it will have the correct regional settings. You'll use this Windows ID when you configure replication.

### ► Important information about IIS

When you first install Sage 300 Construction and Real Estate 17.1 and configure SQL Replicator, you'll be able to access your data through Sage Construction Central from within your company's intranet—for example, from a computer in the accounting office—but not from outside of it, such as from a mobile device in the field. Additional steps are required to establish Cloud access.

In order to enable the connection within your intranet, the installation process configures IIS on your accounting server to expose SQL Server data within the same Active Directory domain. Enabling IIS on a server to expose data *outside* the domain is not recommended as it presents security risks. Instead, data is synchronized to an Azure Active Directory site, which provides a reliable and secure repository from which information can be accessed in the field.

Continue following the instructions in this guide. Establishing access to the Cloud is covered in the section "Set up Azure Active Directory for Sage Construction Central" on page 25.

## SQL Server Express and Standard Editions

Before you install SQL Server, determine whether you can use the Express edition (at no additional cost) or you need the Standard edition. SQL Server Express limits the size of its databases to 10 gigabytes each. Each company folder that you replicate will be a separate database, and you can have as many databases as needed.

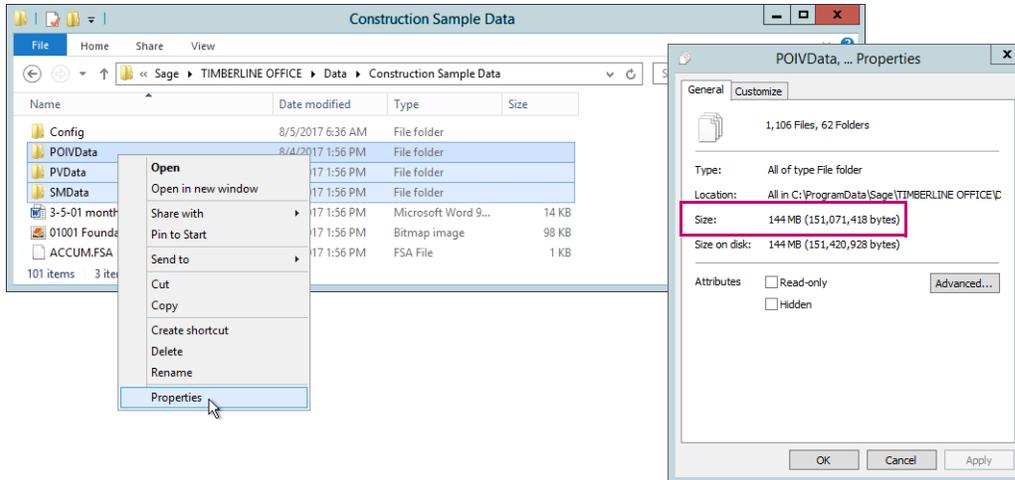
To determine the approximate size of your replicated data, follow these steps.

1. On the accounting server, browse to the location of your Sage 300 Construction and Real Estate company folders.
2. Open the first company folder you want to replicate, and select the **POIVData**, **PVData**, and **SMDData** folders.



**NOTE:** You might not have all of these folders. The **POIVData** folder will only be present if you use Purchasing and Inventory. The **SMDData** will only be present if you use Service Management.

### 3. Right-click the selected folders and select **Properties**.

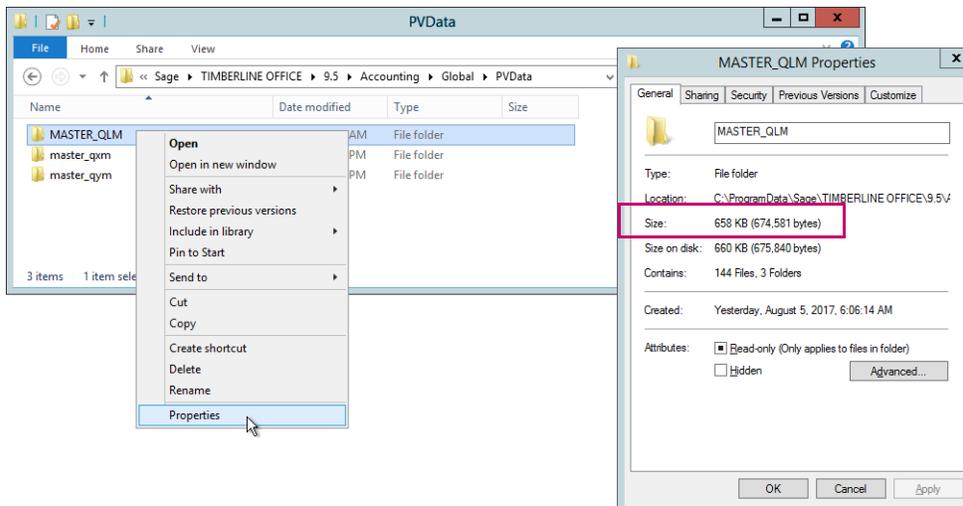


### 4. Make a note of the size of these three folders.

### 5. Next, browse to the location of the **MASTER\_QLM** folder. This is in your installation directory, which is in the following location by default:

C:\ProgramData\Sage\TIMBERLINE OFFICE\9.5\Accounting\Global\PVData

### 6. Right-click the **MASTER\_QLM** folder and select **Properties**.



### 7. Make a note of the size of the folder, and add it to the others.

$(\text{POIVData}) + (\text{PVData}) + (\text{SMDData}) + (\text{MASTER\_QLM}) = \text{Pervasive database size}$

### 8. Add fifty percent (50%) to the total to estimate the size of the SQL Server database.

$1.5 * ((\text{POIVData}) + (\text{PVData}) + (\text{SMDData}) + (\text{MASTER\_QLM})) = \text{SQL Server database size}$



**WARNING:** The sum of these folder sizes should be well below 10 GB to allow for growth. If your SQL Server database is likely to be more than 9 GB, you should obtain the Standard edition of SQL Server. Contact your business partner for assistance.

# Install SQL Server

You can install the SQL Server instance for SQL Replicator on your accounting server or on a different server. You can use the Sage SQL Installer to install the SQL Server instance, configured as needed to work with SQL Replicator. We strongly recommend you use this tool to install SQL Server.



**NOTE:** Sage SQL Installer does not install SQL Server Management Studio for you. If you want this console available on your server, enter “Download SQL Server Management Studio” into a search engine to download and install it.

## ► To install the Sage SQL Installer on a remote server

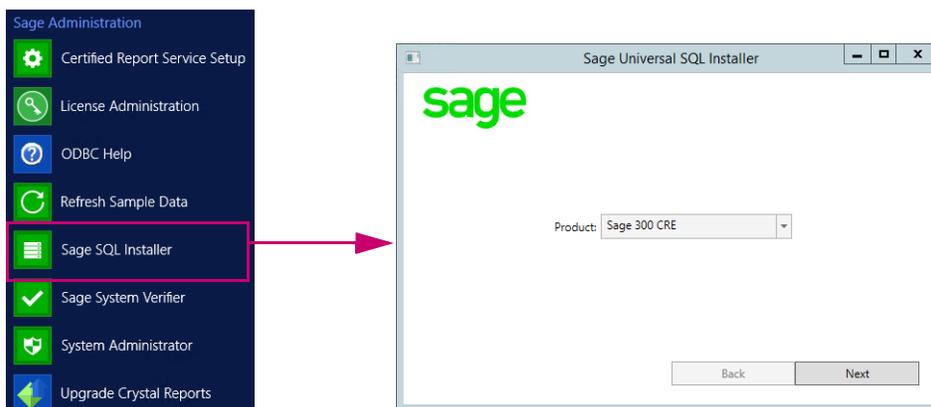
1. In the extracted installation files for Sage 300 Construction and Real Estate 17.1, browse to this location: **AccountingServer\Install\Prerequisites\SUSI**.



2. Copy the file **SUSI.exe** to the server on which you will install the SQL Server instance for SQL Replicator.
3. On the computer on which you will install SQL Server, double-click **SUSI.exe** to install the Sage SQL Installer.

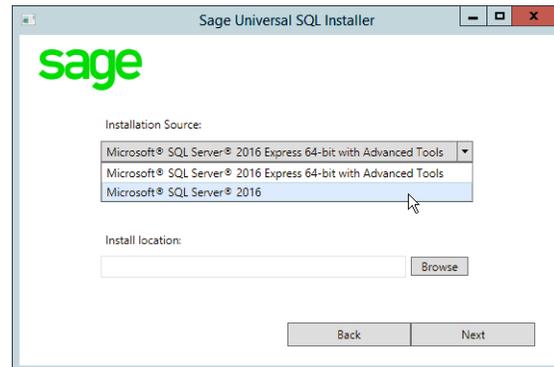
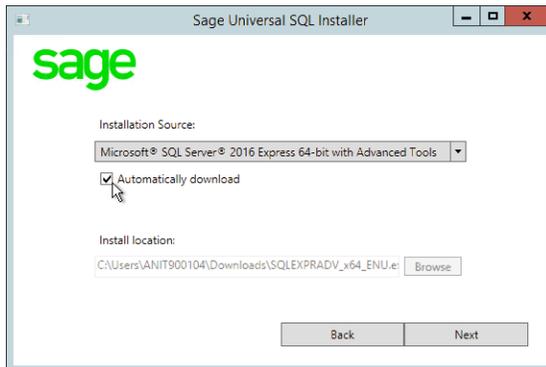
## ► To install the SQL Server instance for SQL Replicator

1. Log on to the computer on which you will install the SQL Server instance.
2. In the Windows Start menu, go to the **Sage Administration** group and click **Sage SQL Installer**.

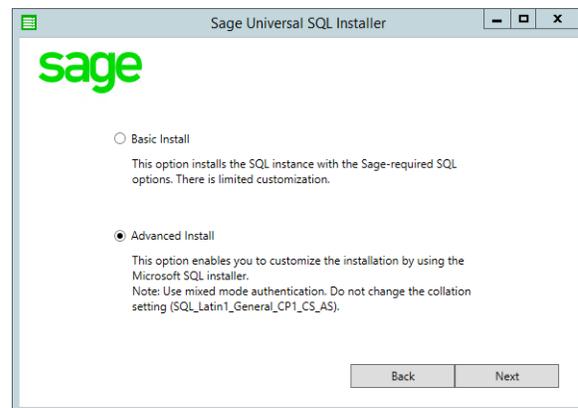
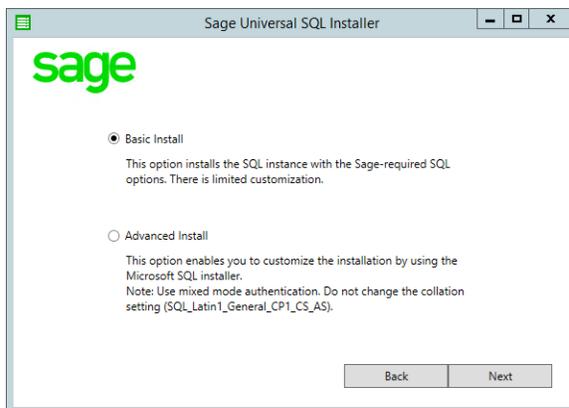


3. Leave **Sage 300 CRE** selected and click **Next**. You might see a warning indicating that your server doesn't meet the minimum hardware requirements. We don't recommend continuing unless your server meets all requirements.
4. Click **Next** if you are ready.

5. Select the **Automatically download** check box if you want the installer to download the latest version of SQL Express 2016 SP1 with Advanced Tools. If you already have the installation file, browse to its location. Alternately, if you have installation media for the Standard or Enterprise edition of SQL Server 2016 SP1, select **Microsoft SQL Server 2016** from the dropdown and browse to the installation file.



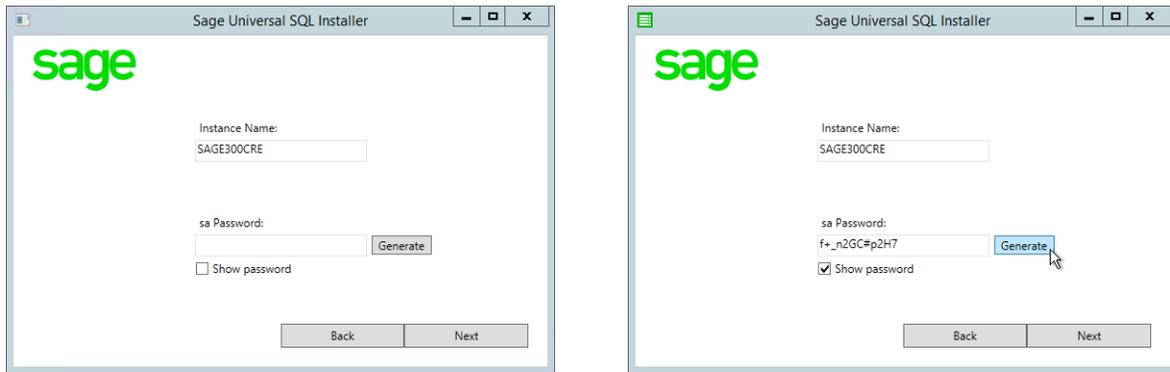
6. Click **Next**. In the next window, select the type of installation.
- Selecting **Basic** installs SQL Server on the server's system drive (usually the C: drive).
  - Selecting **Advanced** takes you to Microsoft SQL Server's installation interface so that you can customize options as you move through the wizard.



7. Click **Next**, and wait for the file to be downloaded (if you selected that option). The remaining steps depend on whether you selected the **Basic** or **Advanced** installation option.

## ► Basic installation

1. The next window shows the name for the new instance. By default, this is **SAGE300CRE**, but you can change it.



2. Enter or generate a password for SQL Server's **sa** (administrative) user. In addition to **sa**, the Windows user name for the person currently logged in will be added to the **sysadmin** server role.



**WARNING:** Be sure to record the **sa** password and save it for your records.

3. Click **Next**, and wait while the installer creates and configures the SQL Server instance.

## ► Advanced installation

You are taken to Microsoft's SQL Server's installation wizard. You can make changes in each of the configuration windows if needed. The options that are entered by default are the correct settings for a SQL Replicator instance.



**FOR MORE INFORMATION:** See "Appendix A: Install SQL Server using the Microsoft Installer" on page 38 for detailed information about required settings.



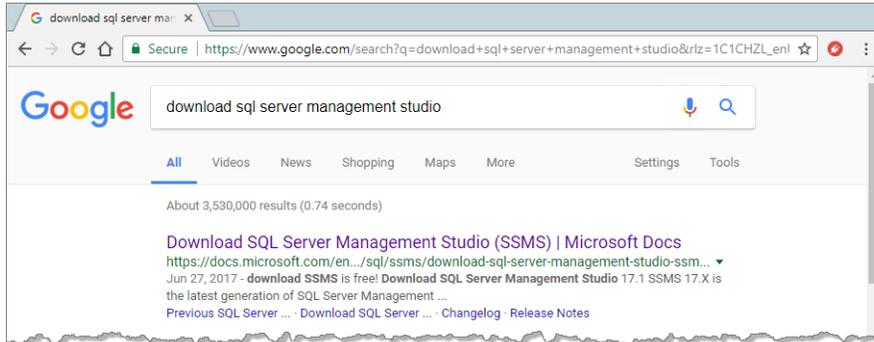
## ► Install SQL Server Management Studio

SQL Server Management Studio is not installed as part of the database engine installation. We recommend that you download and install SQL Server Management Studio if it is not already installed on your server.



**WARNING:** This procedure will require you to restart your accounting server.

1. In a search engine, type “Download SQL Server Management Studio.”

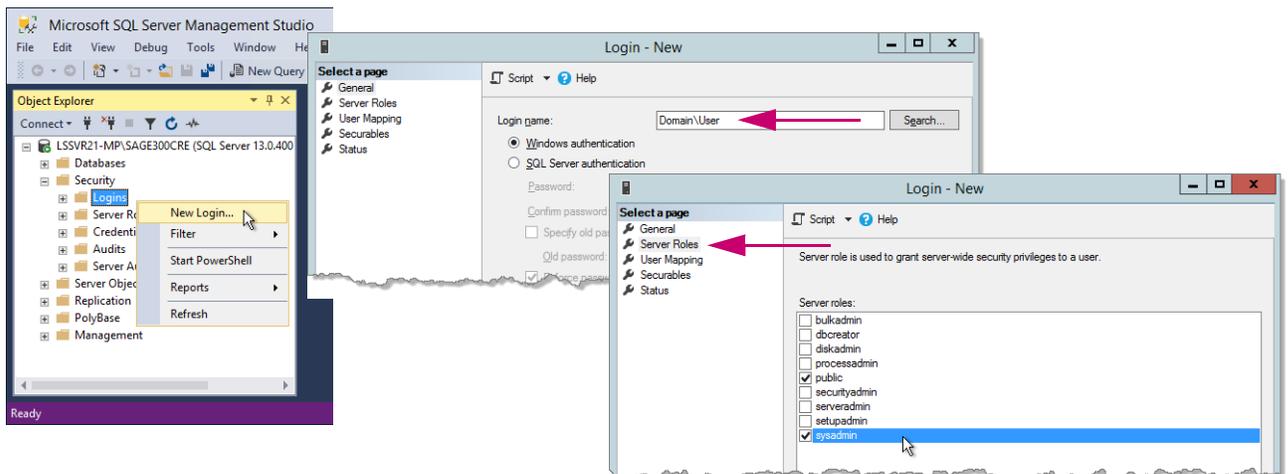


2. Click the link to the Microsoft page and download the program.
3. When the download is finished, double-click the file and follow the steps in the wizard to install SQL Server Management Studio. When the installation is finished, you'll be required to restart your server.

## ► Create a backup system administrator

We recommend that you add a backup system administrator to your SQL Server instance. Your backup administrator should be set up as a user in Sage 300 Construction and Real Estate and linked to a Windows ID. This user should also have local administrative permissions on the accounting server.

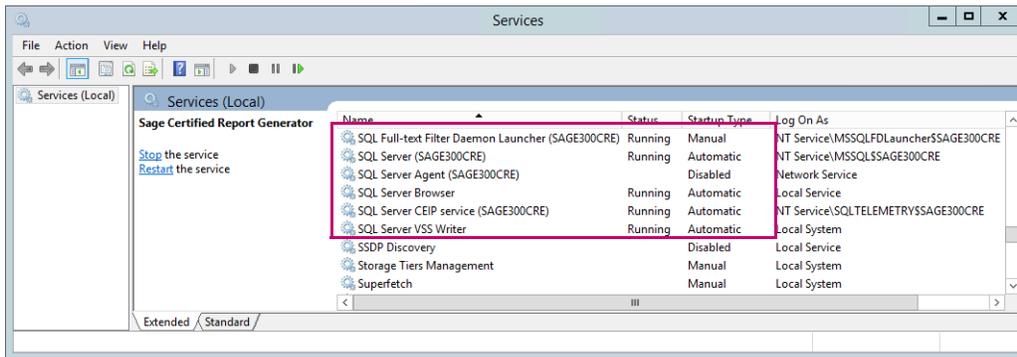
1. When the server has re-started, open SQL Server Management Studio and log in to the Sage 300 Construction and Real Estate instance.
2. Under **Security**, right-click **Logins** and select **New Login**.
3. Next to **Login name**, enter the domain and Windows ID of your backup system administrator.
4. On the **Server Roles** page, select the **sysadmin** server role.



5. Click **OK** to save your changes and close the **Login - New** window.
6. Repeat these steps if this instance is on a different machine than the accounting server and you created a new Windows domain account as described on page 8.

## ► Important information about SQL Server

SQL Server is installed as a Windows service. If services related to SQL Server are stopped, SQL Replicator cannot replicate data.



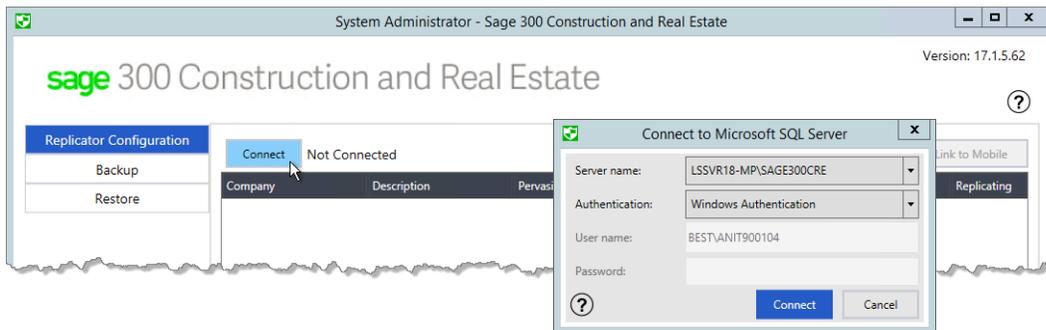
## Configure System Administrator and start replication



### NOTES:

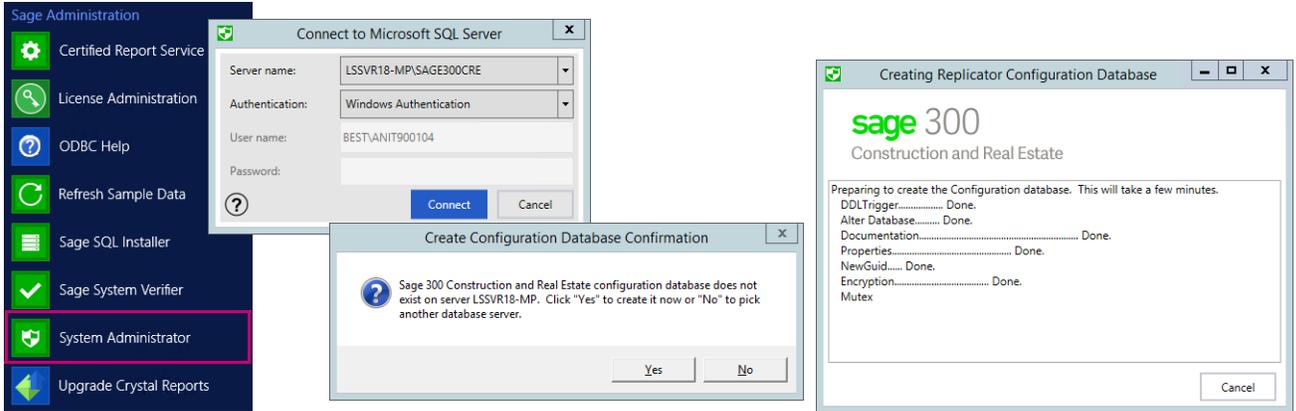
- SQL Replicator runs as a background process in your Windows server operating system.
- Once you start using SQL Replicator and Sage Construction Central, each time you upgrade your data from an earlier version, you'll need to re-start the SQL Replicator process, as shown in step 6 on page 17.
- If you use Sage Construction Central, you will also need to click **Link to Mobile** as shown in step 1 on page 22.

1. In the Windows Start menu, go to the **Sage Administration** group and click **System Administrator**.
2. If the connection window does not open, click **Connect**, and select the instance.

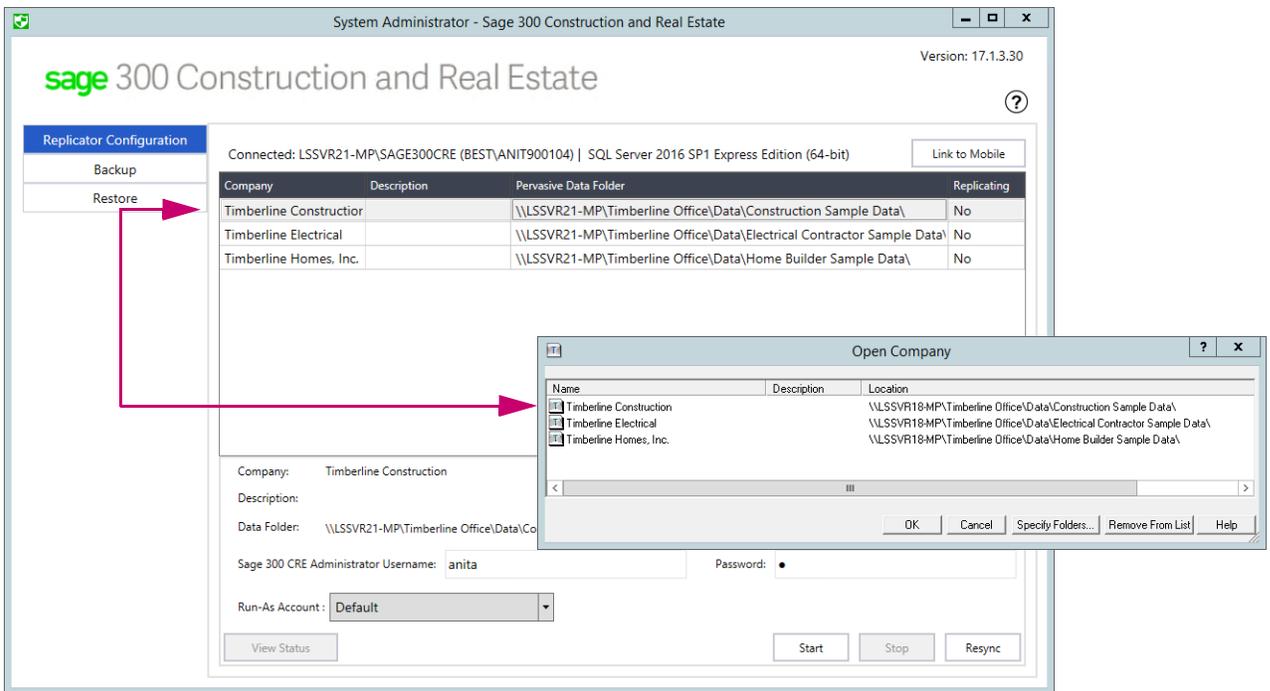


3. For **Authentication**, select **Windows Authentication**. Your Windows domain and user name are automatically entered for the **User name**.
4. Click **Connect**. The first time you open System Administrator, a message asks if you want to create the configuration database.

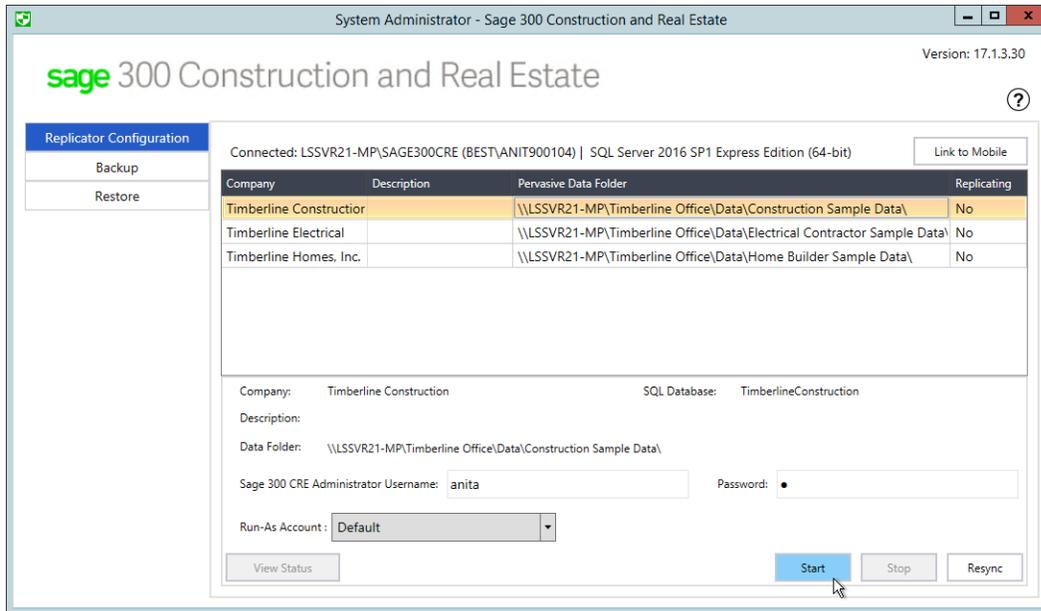
5. Click **Yes**, and wait while the database is created.



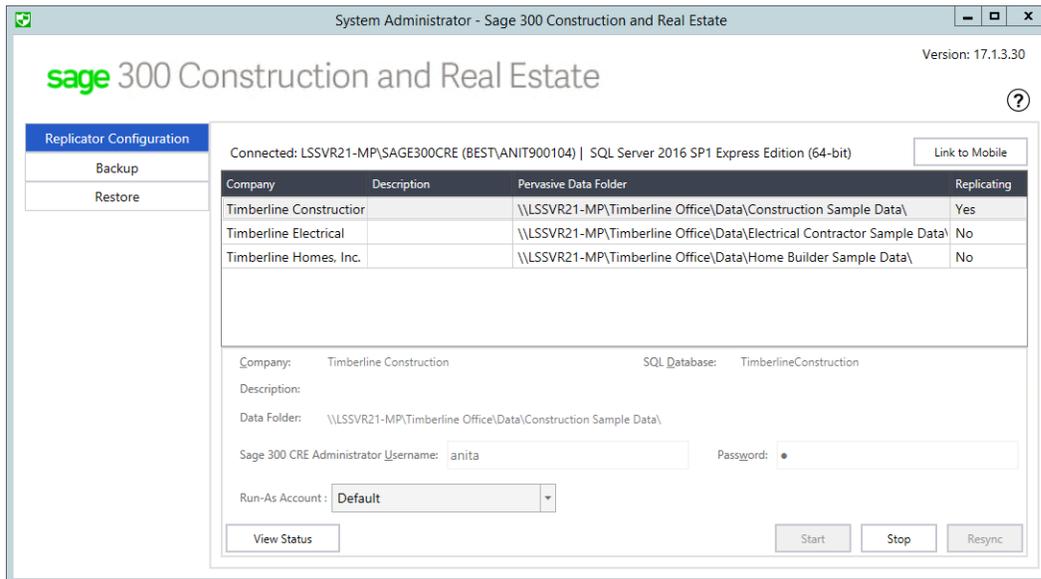
When finished, the **Replicator Configuration** tab shows the list of companies in your **Open Company** list.



6. Click the first company that you want to replicate, and enter the user name and password for the user you created on page 7, step 6.



7. For the **Run-As** account, you can leave it as **Default** if the SQL Server instance is local, and your server's regional setting is for the United States. Otherwise:
- If the SQL Server instance is remote, set the **Run-As Account** to **Other** and enter a Windows domain user ID with administrative privileges on the remote server and the accounting server.
  - For Canadian and Australian installations, set the **Run-As Account** to **Other** and enter the Windows credentials for a user whose region is set to the appropriate country. See "About Canadian and Australian installations" on page 8.
8. Click **Start**, and wait for replication to start.



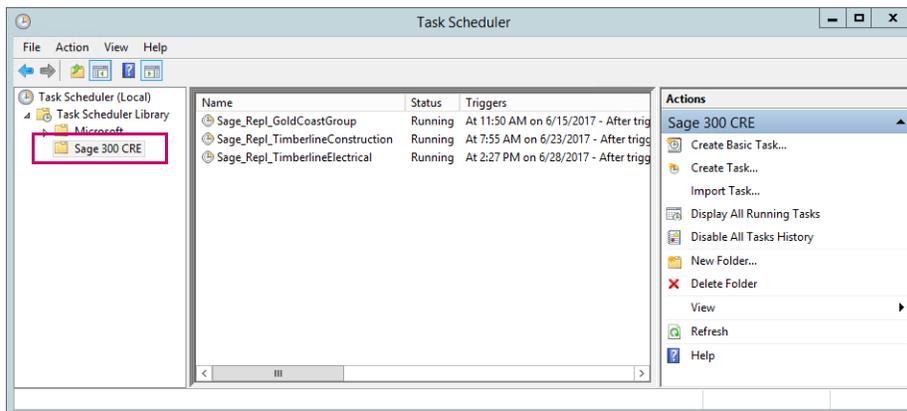
You can click **View Status** to see the replication log.

9. Repeat these steps for each company you plan to replicate.

**NOTES:**

- Each company folder that you replicate is copied to a new database in SQL Server. The replication runs continually as long as the SQL Server instance is running and the credentials you supplied to System Administrator are valid.
- For more information about the status log, see “What happens during replication?” on page 29

10. To see the background replication processing, open Windows Task Scheduler and click the **Sage 300 CRE** folder. Each company folder is represented by its own task in this window. If you stop replication for a company, it disappears from this list.



11. Click **Link to Mobile** to link your replicated company folders to Sage Construction Central.

## Backing up and restoring with System Administrator

Now that you've upgraded to Sage 300 Construction and Real Estate version 17.1, you'll need to use System Administrator to configure and run your regular backups. Restoring a Sage 300 Construction and Real Estate backup requires not only the files in your data folders, but also files and registry keys from numerous areas in your server environment. With the addition of the SQL Server database and Sage Construction Central website, these additional components are critical to your ability to successfully restore from a backup. Without them, your data cannot be restored.



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**FOR MORE INFORMATION:** See the Knowledgebase article [How do I use the System Administrator to back up and restore data in version 17.1 and beyond?](#)

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# Activate Licenses and set up Sage Construction Central users

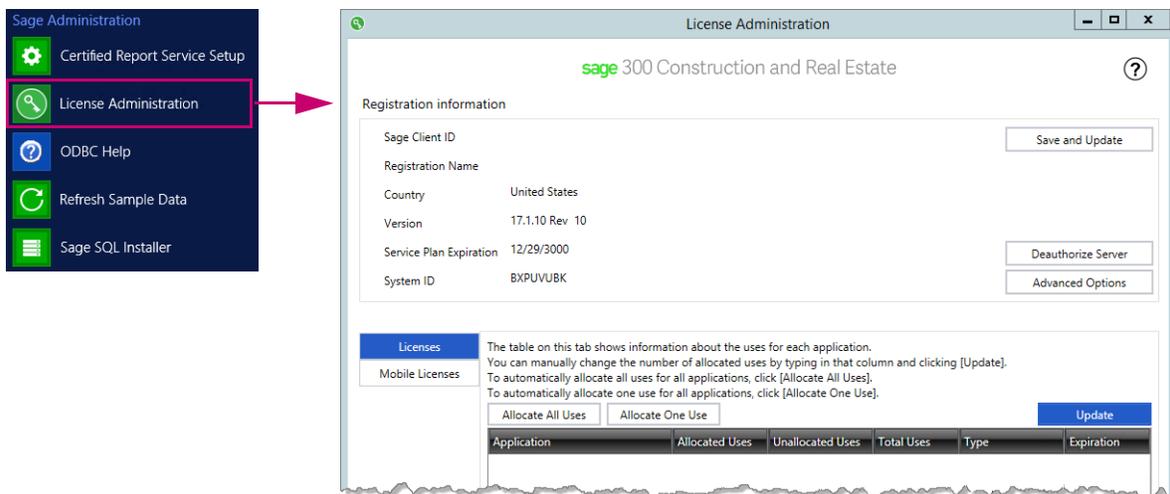


## NOTES:

- In order to activate licenses, your server must have access to the Internet. If your organization's policy requires servers to be blocked from the Internet, and you won't connect to Sage Construction Central from devices outside your network, you can disconnect it immediately after you activate your license.
- License Administration connects to the Sage licensing system at least once a year to verify that licenses are still active. If your server is generally not connected to the Internet, your licenses could expire after one year. To reactivate licenses, contact Support through one of the means described in the Knowledgebase article [17540](#).

## ▶ Activate licenses

1. On the Home page, in the **Sage Administration** group, click **License manager**.
2. Enter your information in the **Sage Client ID** and **Registration Name** boxes.



3. Click **Save and Update**. Allocate uses based on your organization's needs.



- Click **Allocate All Uses** if you will not install Sage 300 Construction and Real Estate on any other server (including a test server).
- Click **Allocate One Use** if you need to install Sage 300 Construction and Real Estate on more than one server, such as a test server or regional production server. Once you allocate a single use, you can edit the number of uses available to this server.



**NOTE:** For the accounting system, the uses assigned to a server are available to users logging in to the system on a first-come, first-served basis. If two uses are available, the first two users to log in will be able to use the system. The third user will not be able to use the system until one of the uses is freed up.

- The licenses are applied based on your selection. If you selected **Allocate All Uses**, the total number of uses appears in the blue column, with **Unallocated Uses** set to zero.

| Application         | Allocated Uses | Unallocated Uses | Total Uses | Type             | Expiration |
|---------------------|----------------|------------------|------------|------------------|------------|
| Accounts Payable    | 3              | 0                | 3          | Non-subscription |            |
| General Ledger      | 3              | 0                | 3          | Non-subscription |            |
| Property Management | 3              | 0                | 3          | Non-subscription |            |

If you selected **Allocate One Use**, you'll see one use listed in the blue column, with the remaining number of uses in the **Unallocated Uses** column. To adjust the number of uses applied to this server, adjust a number in the blue column, and click **Update**. The remaining unallocated uses are available to use on a different server.

| Application         | Allocated Uses | Unallocated Uses | Total Uses | Type             | Expiration |
|---------------------|----------------|------------------|------------|------------------|------------|
| Accounts Payable    | 1              | 2                | 3          | Non-subscription |            |
| General Ledger      | 1              | 2                | 3          | Non-subscription |            |
| Property Management | 1              | 2                | 3          | Non-subscription |            |

### ► Assign Mobile licenses



**NOTE:** Mobile licenses are assigned differently than for the accounting system. Mobile licenses must be assigned to specific Windows IDs corresponding to users who are set up in Sage 300 Construction and Real Estate security and mapped to that ID. This means that only assigned users can access Sage Construction Central; uses are not available on a first-come, first-served basis as they are in the accounting system.

- To assign Sage Construction Central users, click the **Mobile Licenses** tab. Expand **Mobile Project**, and click **Add User**.

| Application     | Assigned Uses | Allocated Uses | Unallocated Uses | Total Uses | Type             | Expiration |
|-----------------|---------------|----------------|------------------|------------|------------------|------------|
| Mobile Designer | 0             | 3              | 0                | 3          | Non-subscription |            |
| Mobile Insights | 0             | 3              | 0                | 3          | Non-subscription |            |
| Mobile Project  | 1             | 3              | 0                | 3          | Non-subscription |            |

| Users |   |
|-------|---|
| admin | X |

- Add the users who will access Mobile Projects data.
- Click **Update** to save your changes.

# Test Sage Construction Central from your intranet

Once your data has been replicated, you can browse to the Sage Construction Central site from inside your network to verify your data. The URL for this site requires you to know the fully qualified domain name for your server. The URL follows this pattern: `http://FullServerName:8080`. For example, if your server is `sageserver.example.com`, the URL is `http://sageserver.example.com:8080`.



**WARNING:** Use this internal URL only for testing that your Sage Construction Central is working properly. To use the site securely, you must set up the Azure Active Directory site as explained starting on page 25.

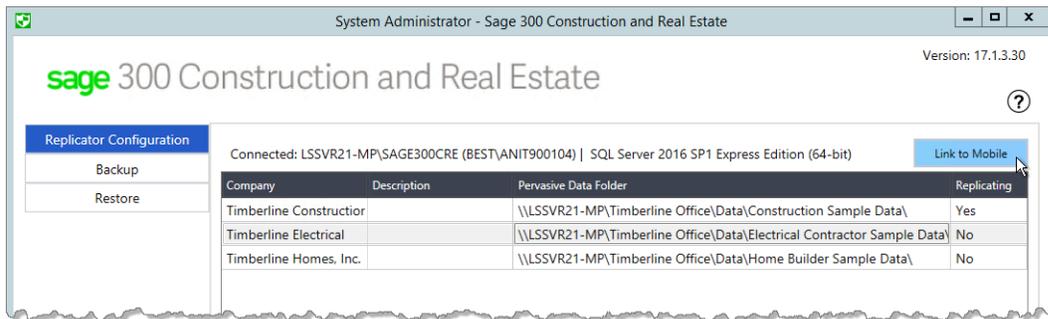


## NOTES:

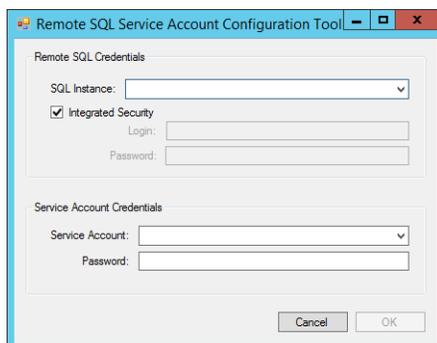
- Before you can log on to Sage Construction Central, your company's data must have finished replicating.
- The Sage Construction Central site uses port number 8080 by default. If this port is already in use on your accounting server, you can change the port used by Sage Construction Central.
- By default, Windows servers have Enhanced Security enabled for Internet Explorer. If you want to use Internet Explorer to verify the Sage Construction Central website from the accounting server, you'll need to disable it. See the following link for more information:

<https://prajwaldesai.com/disable-ie-enhanced-security-in-windows-server-2012-r2/>

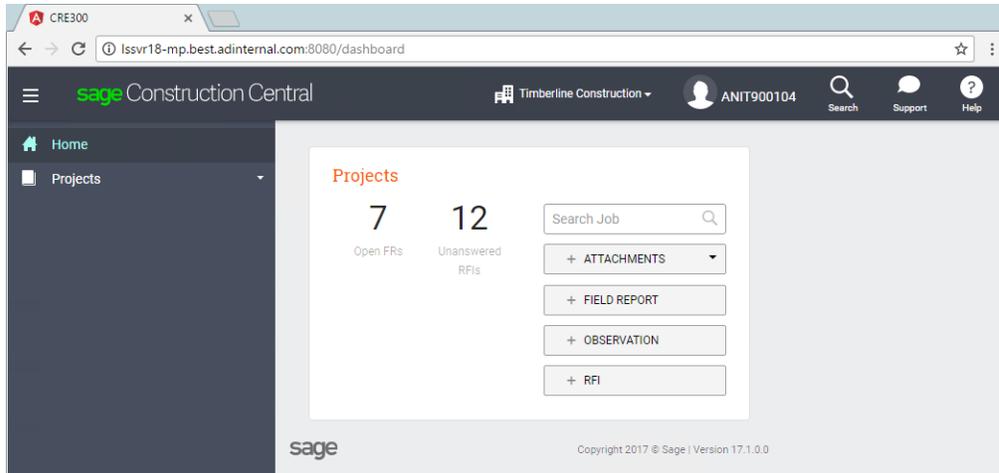
1. In System Administrator, click **Link to Mobile** if you have not already done so. This links Sage Construction Central to your SQL Server instance.



2. If your SQL Server instance is installed on a server other than your accounting server, follow these steps. (Otherwise, skip to step 3.)
  - a. In Windows Explorer, browse to the **Shared** folder in the installation director for Sage 300 Construction and Real Estate. By default, this is `C:\Program Files (x86)\Timberline Office\Shared`.
  - b. Double-click the file **RemoteSQLServiceAccountConfigurationTool.exe**.



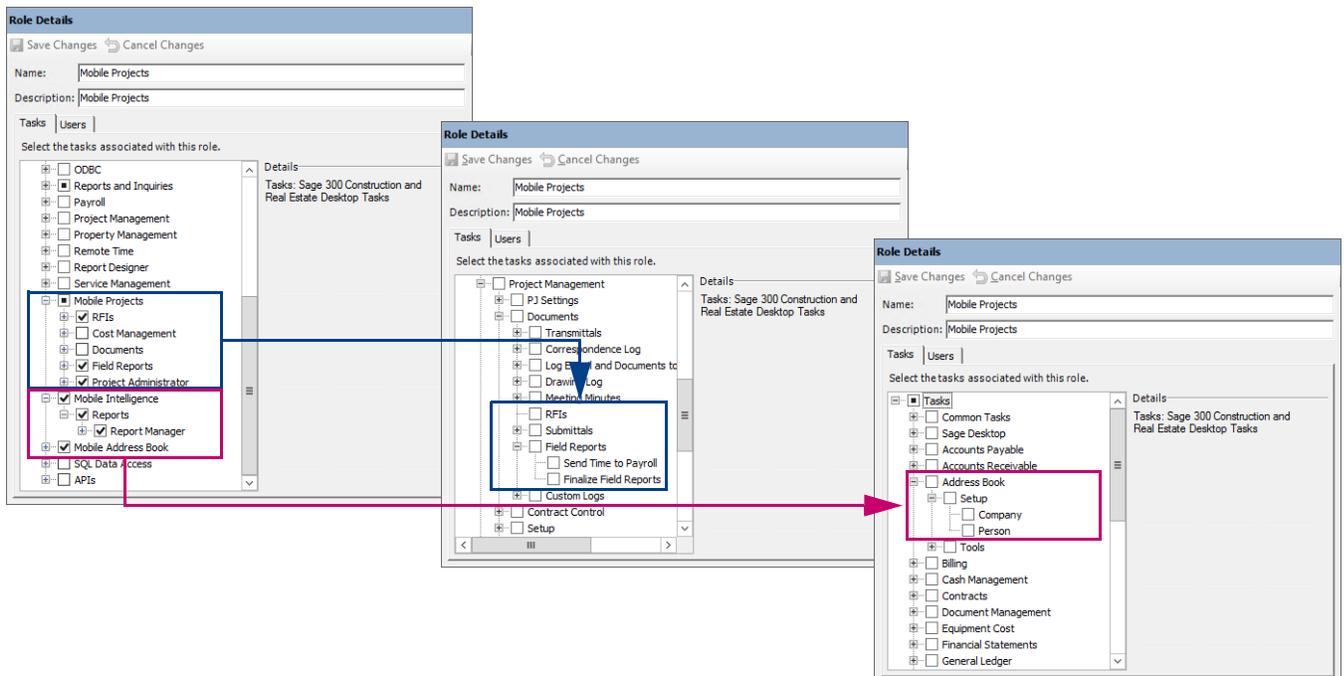
- c. Enter the location of your **SQL Instance**, as well as domain credentials for a Windows user with administrative access to the remote location of your SQL Server instance and your accounting server.
  - d. Click **OK** when you are finished. This utility changes the login account for the Sage Remote Print service and the Sage Worker Engine service to the login used for the SQL Replicator process.
3. Open a browser and go to your Sage Construction Central site. You'll be required to enter the Windows credentials for one of the users you added on page 21, step 1.



## Set up security for Sage Construction Central

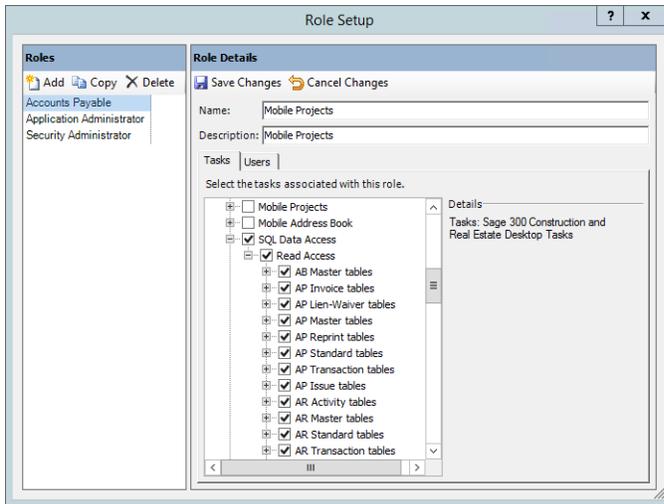
In Security Administration, task permissions are available for use with Sage Construction Central. These permissions are independent of the corresponding permissions in Project Management or Address Book.

- You can grant access to areas under **Mobile Projects** without granting access to the corresponding Project Management permissions.
- Likewise, the **Mobile Address Book > Quick Add Contact** and **Mobile Address Book > Set Up Contact** permissions are not linked to the **Address Book > Set Up** permissions.



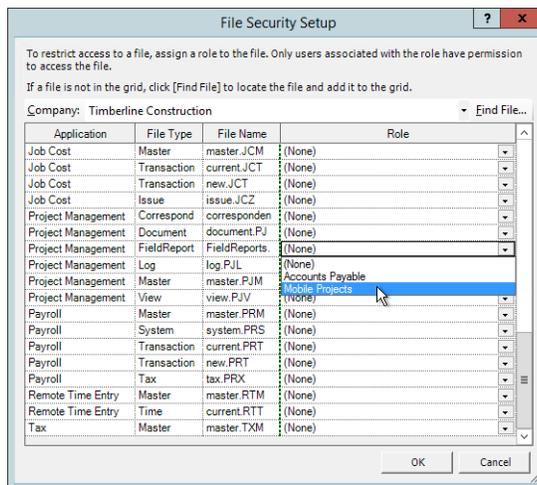
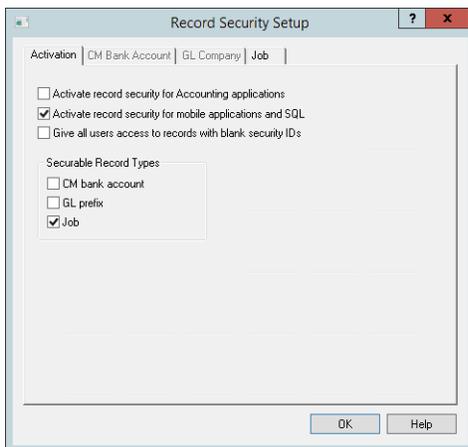
# Set up security for SQL-based reports

If your users will need to view reports generated from the SQL Server data, you need to add permission to the appropriate tables in SQL Server to their role. Under **SQL Data Access > Read Access**, select the relevant tables for each role.



# About record-level security with mobile applications

If your company uses record- or file-level security, you can activate these options for the mobile applications independently from the accounting applications. For example, you might want to implement record-level security for jobs in Sage Construction Central, but not for Job Cost in the back office.



If you use file-level security, Sage Construction Central users need permission to the Address Book files plus the files related to other mobile modules you've implemented (for example, Job Cost or Project Management).

# Set up Azure Active Directory for Sage Construction Central

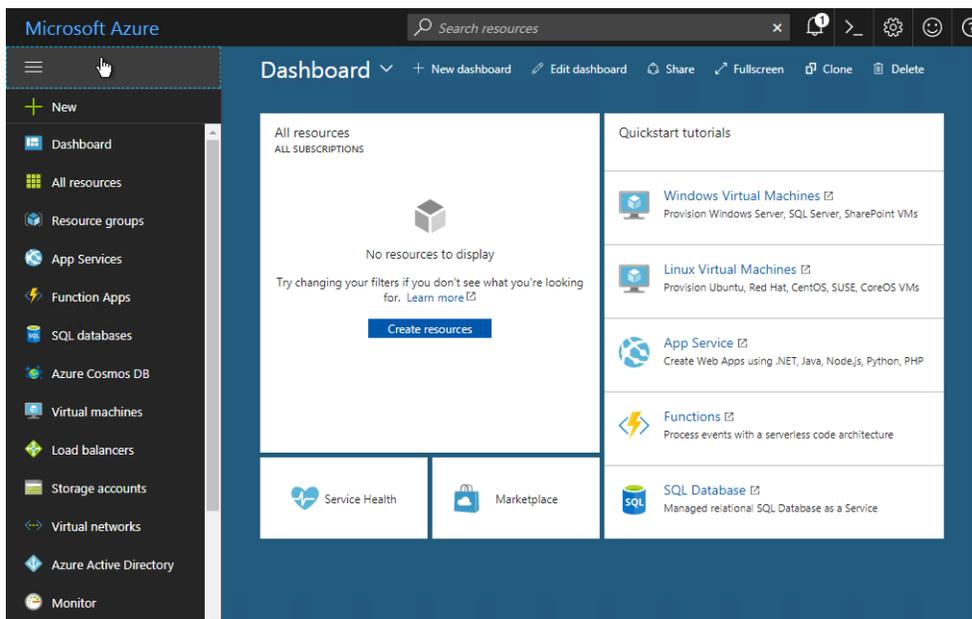
To access Sage Construction Central from outside your network, you'll configure a Microsoft Azure application to connect to your accounting server. To do this, you need an Azure Active Directory Basic account, which is provisioned for you automatically when you purchase a subscription to Sage Construction Central.



**NOTE:** Azure Active Directory Basic accounts are provisioned based on your country: the United States, Canada, or Australia.

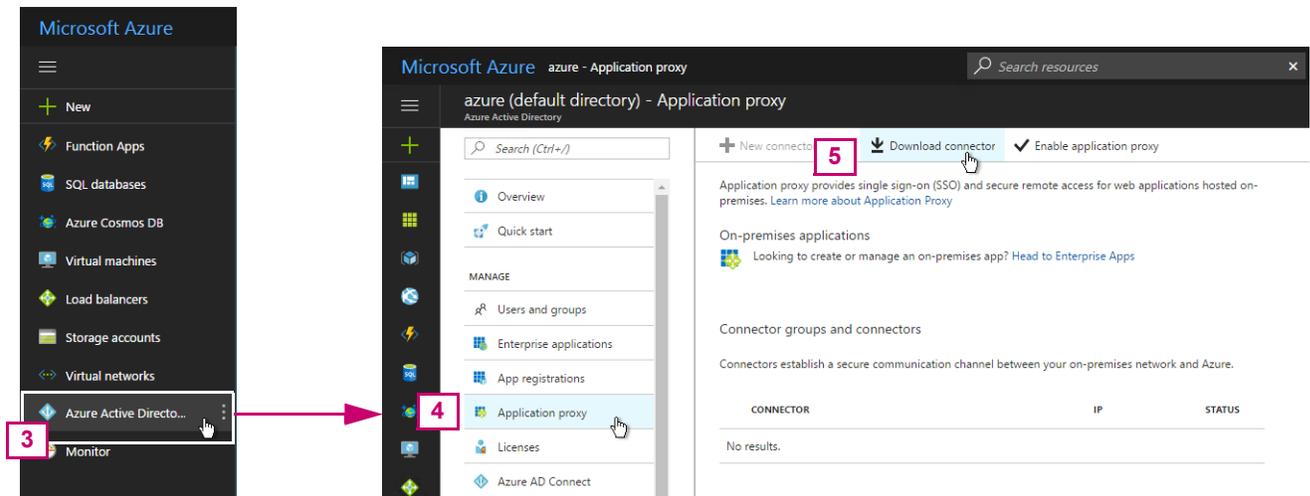
## ► Publish your Sage Construction Central site to Azure

1. From your accounting server, open an Internet browser and go to <https://portal.azure.com>. Sign in if needed.
2. If you are asked to change a temporary password, supply the Microsoft account credentials that you received in your welcome email. Be sure to record this information once you enter the new password.



3. On the left, click **Azure Active Directory**.
4. In the next window, click **Application proxy**.

## 5. Click **Download connector**.



## 6. Review the information on the connector download page. Your accounting server should already be on a supported operating system.



### Azure AD Application Proxy Connector Download

Download and install the Application Proxy connector to enable a secure connection between applications inside your network and the Application Proxy. Only one installation is necessary to service all your published applications; a second connector can be installed for high availability purposes.

#### System Requirements

- Operating systems:
  - Windows Server 2012 R2
  - Windows Server 2016
- Make sure the connector's communication with the Application Proxy is not blocked by a firewall. To check that all required ports are open, please try our [port check tool](#).
- The connector must have access to all on-premises applications that you intend to publish

Work with your system administrator to ensure the necessary ports are open to outbound traffic.

#### Installation Instructions

To install the Application Proxy connector, download the connector installation package and install it on a local, designated machine.

#### Related Resources

For more information on the Application Proxy connector, see [our online content](#).

[I accept the license terms and privacy agreement](#)

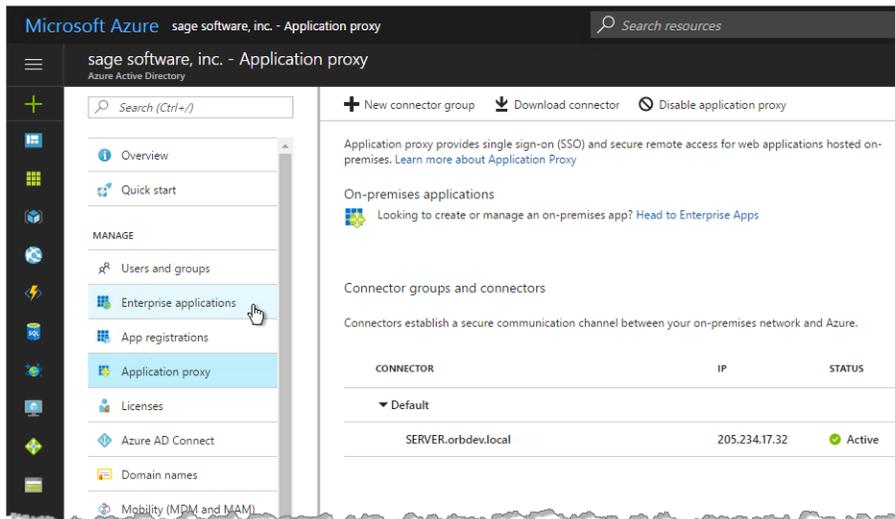
[Download](#) (64 bit version)



**FOR MORE INFORMATION:** The outbound ports required for the application proxy are described in the Microsoft article [Get started with Application Proxy and install the connector](#).

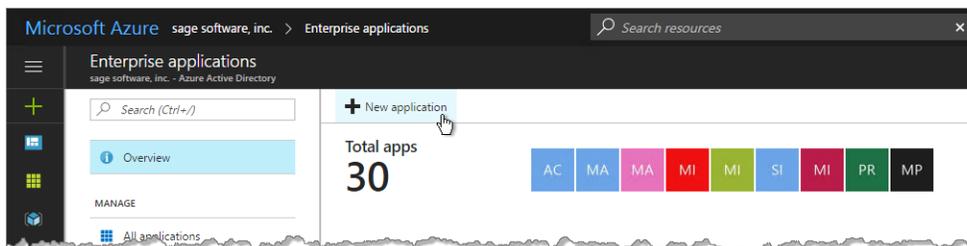
## 7. Accept the license agreement, click **Download**, and follow the instructions to install the connector.

- When the installation is finished, return to the Azure portal page (<https://portal.azure.com>) and refresh it. You'll see your connector associated with your accounting server. This means the connection was successful. Now you'll publish your Sage Construction Central website to Azure.



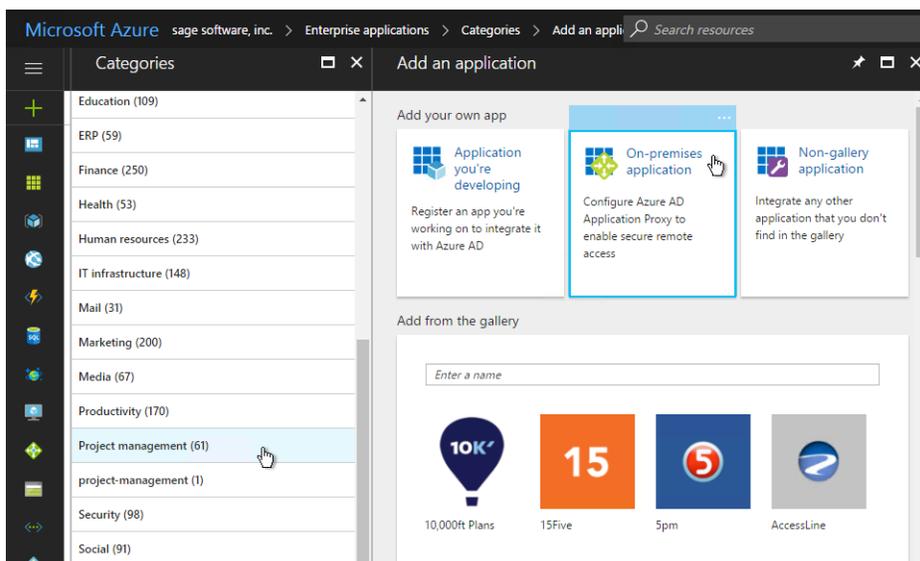
- On the left, click **Enterprise Applications**.

- Click **New application**.

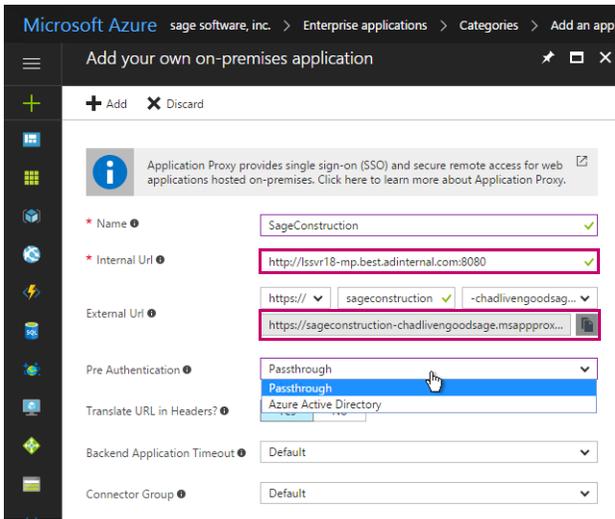


- Select a category; you can choose any category you want. In this example, we chose **Project Management**.

- Click **On-premises application**.



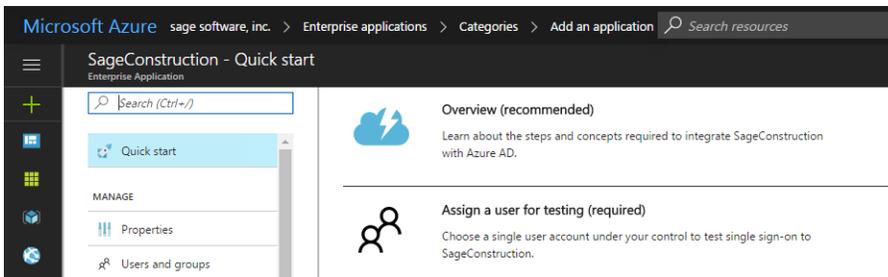
- Enter a display name for your application. This can be your company name or some other name that makes sense to your employees. This example shows a company called **Sage Construction**:



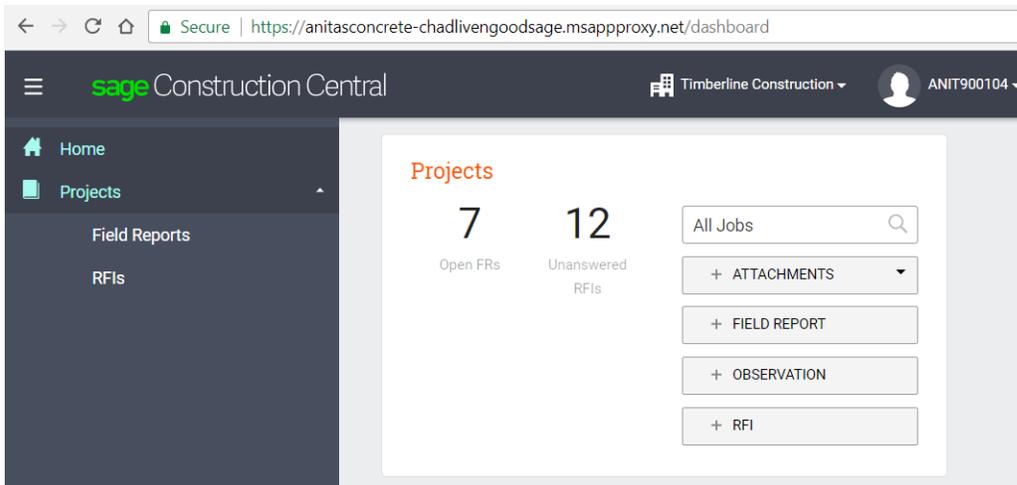
**Internal Uri** is your server's name followed by a colon (:), and the port number (usually **8080**).

**External Uri** is the public, Internet address for your Sage Construction Central site.

- For the **Internal Uri**, enter the URL you established for your site on page 22. This entry must include the port, **:8080**, as part of the address.  
Notice that the public URL for your site will be a combination of the entries in the window above:  
`https://applicationname-accountname.msapproxy.net`
- For **Pre Authentication**, select **Passthrough**. You can leave the remaining options as they are.
- Click **Add**. After the application is created, you're taken to the **Enterprise Application** page. You don't need to modify anything else in this window.



- Open the URL in a browser to make sure it's connected.



# What happens during replication?

This section describes what happens during replication, how security roles and users are replicated, and attributes of the new databases.

## Databases in the SQL Server instance

When you install Sage 300 Construction and Real Estate 17.1 on your accounting server, you must be logged in as a local administrator, and the server must be on a Windows Active Directory domain.

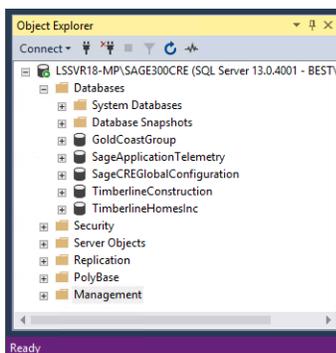
The Windows domain user who installs the SQL Server instance (page 11) is added as a server login and assigned to the **sysadmin** server role. That user, plus the built-in SQL Server **sa** user, are the only two logins with full administrative permissions to the SQL Server instance or to System Administrator.



**FOR MORE INFORMATION:** To learn more about SQL Server security, see the Microsoft article on [Server and Database Roles in SQL Server](#). To add backup system administrators, see “Create a backup system administrator” on page 14.

When you connect Sage 300 Construction and Real Estate to the SQL Server instance through System Administrator (page 15), the SageCREGlobalConfiguration database is added to the instance. This is the configuration database for SQL Replicator, and—as with all databases—it should never be modified directly in SQL Server Management Studio. Make all changes in System Administrator or Sage 300 Construction and Real Estate.

Once you configure and start replication, each company folder that you replicate is represented by a separate database on the SQL Server instance.

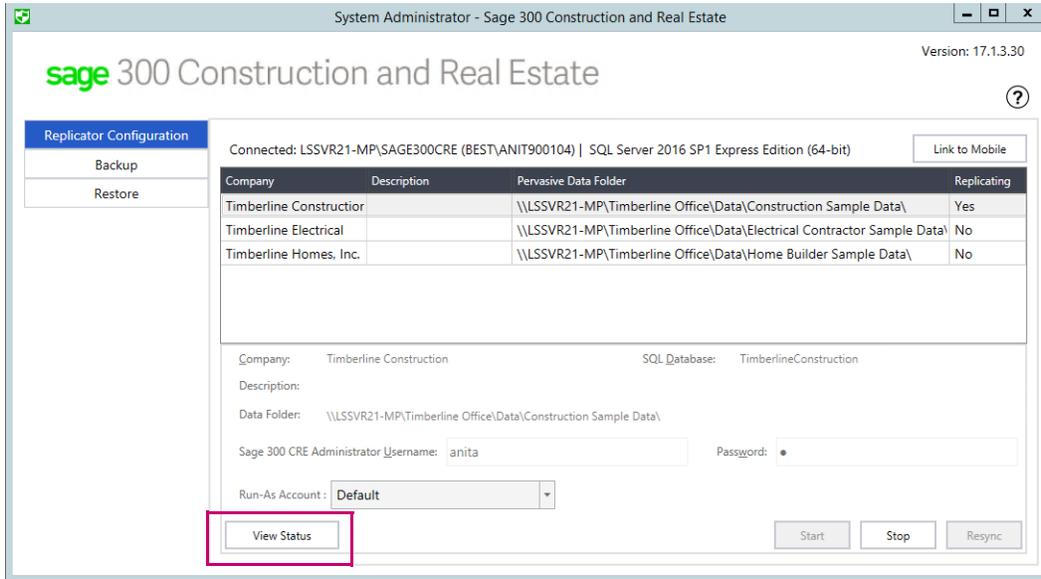


## New Row\_ID and Row\_Version fields

Each Pervasive table now has two additional fields, **Row\_ID** and **Row\_Version**, which are used during replication to identify changes to the data. Modifications to the data resulting from Sage 300 Construction and Real Estate processing cause these fields to be updated. When the replication process scans tables, it compares the values in these fields to the values stored in the SQL Server data.

# The replication status log

Once you start replication, you can click **View Status** in System Administrator to see the log. Replication proceeds in the sequence described below.



1. Each time replication starts, schema information is read from the Pervasive data. Any changes to custom fields, custom descriptions, or record and file security are incorporated at this time.
2. Once schema information is saved, replication enters **BC**, or **Bulk Copy** mode. All data from all tables is copied into the SQL Server database, starting with the QXM security information, and then proceeding alphabetically through all tables.

```

Connecting to SQL Server "LSSVR21-MP\SAGE300CRE".
Starting replication for Timberline Construction.
  From "\\LSSVR21-MP\Timberline Office\Data\Construction Sample Data\"
  To SQL Database "TimberlineConstruction".
Loading schema information from tsSimba
Loading schema information from SM
Loading schema information from POIV
Saving schema information.
BC => TS_MODE_COLUMN_NAME          14,239 row(s) in 3,385 ms      4,207 rows/sec.
BC => TABLENAME_FILEFULLPATH      457 row(s) in 2,203 ms       207 rows/sec.
BC => FILEINFO                      59 row(s) in 2,851 ms        20 rows/sec.
BC => CTL_TS_COMPANY_INFORMATION    1 row(s) in 1,542 ms         0 rows/sec.
BC => QXM_MASTER_AUTHENTICATION_POLICY 1 row(s) in 1,157 ms         0 rows/sec.
BC => QXM_MASTER_SECURITYUSER       1 row(s) in 2,914 ms         0 rows/sec.
BC => QXM_MASTER_SECURITYROLE       7 row(s) in 3,745 ms         1 rows/sec.
BC => QXM_MASTER_SECURITYROLESECURITYUSER 7 row(s) in 2,506 ms         2 rows/sec.
BC => QXM_MASTER_SECURITYACTIVITY    2,687 row(s) in 3,411 ms      787 rows/sec.
BC => QXM_MASTER_SECURITYACTIVITYCATEGORY 2,200 row(s) in 3,567 ms      616 rows/sec.
BC => QXM_MASTER_ACTIVITYCATEGORY    2,691 row(s) in 3,879 ms      693 rows/sec.
BC => QXM_MASTER_SECURITYROLEACTIVITY 2,684 row(s) in 2,382 ms     1,127 rows/sec.

Starting initial bulk-copy replication.
BC => ARM_MASTER_COMPANY            98 row(s) in 1,013 ms         96 rows/sec.
BC => ARM_MASTER_COMPANY_CUSTOM_FIELDS 0 row(s) in 1,068 ms          0 rows/sec.
BC => ARM_MASTER_COMPANY_PERSON_ADDRESS 274 row(s) in 1,243 ms       220 rows/sec.
BC => ARM_MASTER_COMPANY_TRADE      59 row(s) in 1,505 ms         39 rows/sec.
BC => ARM_MASTER_CONTACT            244 row(s) in 1,474 ms       165 rows/sec.
BC => ARM_MASTER_GROUP              36 row(s) in 1,541 ms         23 rows/sec.
BC => ARM_MASTER_GROUP_MEMBER       119 row(s) in 1,714 ms        69 rows/sec.
BC => ARM_MASTER_PERSON             110 row(s) in 1,591 ms        69 rows/sec.
BC => ARM_MASTER_PERSON_CUSTOM_FIELDS 0 row(s) in 704 ms            0 rows/sec.
BC => addchg                        3 row(s) in 322 ms            9 rows/sec.
BC => AGREEMENT                     3 row(s) in 183 ms            16 rows/sec.
BC => AGREQUIP                      2 row(s) in 297 ms            6 rows/sec.
  
```

- Once the bulk copy cycle is completed, row-level security (RLS) is applied.
- Replication enters RC, or RAM Journal mode. All tables and rows are scanned for differences in the Row\_ID and Row\_Version fields.

```

BC => QXM_MASTER_SECURITYACTIVITYCATEGORY 2,200 row(s) in 2,875 ms 765 rows/sec.
BC => QXM_MASTER_ACTIVITYCATEGORY 2,691 row(s) in 2,213 ms 1,215 rows/sec.
BC => QXM_MASTER_SECURITYROLEACTIVITY 2,691 row(s) in 2,673 ms 1,007 rows/sec.

Configuring RLS
Optimizing database for maximum performance!
Apply new security permissions

Starting change scanning.
RJ => ARM_MASTER_COMPANY 99 row(s) in 323 ms 307 rows/sec. I: 0 U: 0 D: 0
RJ => ARM_MASTER_COMPANY_PERSON_ADDRESS 274 row(s) in 293 ms 938 rows/sec. I: 0 U: 0 D: 0
RJ => ARM_MASTER_COMPANY_TRADE 59 row(s) in 374 ms 158 rows/sec. I: 0 U: 0 D: 0
RJ => ARM_MASTER_CONTACT 245 row(s) in 278 ms 881 rows/sec. I: 0 U: 0 D: 0
RJ => ARM_MASTER_GROUP 36 row(s) in 321 ms 112 rows/sec. I: 0 U: 0 D: 0
RJ => ARM_MASTER_GROUP_MEMBER 119 row(s) in 274 ms 435 rows/sec. I: 0 U: 0 D: 0
RJ => ARM_MASTER_PERSON 110 row(s) in 286 ms 385 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_BATCH 0 row(s) in 308 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_CHECK 0 row(s) in 264 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_CREDIT_CARD_PAYMENT 0 row(s) in 355 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_DIST_PAYMENT 0 row(s) in 288 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_DISTRIBUTION 16 row(s) in 253 ms 63 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_ELECTRONIC_PAYMENT 0 row(s) in 351 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_INVOICE 8 row(s) in 330 ms 24 rows/sec. I: 0 U: 0 D: 0
    
```

- Once a full cycle through the tables is completed in RC mode, the log simply reflects the number of scans with date and time of completion until new data is found.

```

BC => TS_PREFERENCE 1 row(s) in 1,037 ms 0 rows/sec.
BC => TS_RELATIONSHIP 2,560 row(s) in 1,526 ms 1,677 rows/sec.
RJ => TXM_MASTER_TAX_GROUP 3 row(s) in 360 ms 8 rows/sec. I: 0 U: 0 D: 0
RJ => TXM_MASTER_TAX_RATE 3 row(s) in 348 ms 8 rows/sec. I: 0 U: 0 D: 0
RJ => CTL_TS_CUSTOMLISTS 229 row(s) in 289 ms 792 rows/sec. I: 0 U: 0 D: 0

Scan complete: Last completed Sun, 06 Aug 2017 12:34:00 GMT
Scan complete: Last completed Sun, 06 Aug 2017 12:34:10 GMT
Scan complete: Last completed Sun, 06 Aug 2017 12:34:20 GMT
Scan complete: Last completed Sun, 06 Aug 2017 12:35:00 GMT
Scan complete: Last completed Sun, 06 Aug 2017 12:35:10 GMT
    
```

- When replication finds differences in the Row\_ID and Row\_Version fields since the last scan, the status log reflects the number of insertions (I), updates (U), and deletions (D). The changes are then replicated to SQL Server. For example, entering an Accounts Payable invoice results in the following log entries:

```

Apply new security permissions
RJ => API_NEW_BATCH 1 row(s) in 19,102 ms 0 rows/sec. I: 0 U: 1 D: 0
RJ => API_NEW_DISTRIBUTION 17 row(s) in 19,989 ms 0 rows/sec. I: 1 U: 0 D: 0
RJ => API_NEW_INVOICE 8 row(s) in 1,440 ms 5 rows/sec. I: 0 U: 0 D: 0
RJ => API_NEW_TAX_DIST_PAYMENT 0 row(s) in 1,586 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => APM_MASTER_BATCH 47 row(s) in 17,648 ms 2 rows/sec. I: 1 U: 0 D: 0
RJ => APM_MASTER_DISTRIBUTION 251 row(s) in 16,921 ms 14 rows/sec. I: 2 U: 0 D: 0
RJ => APM_MASTER_INVOICE 217 row(s) in 16,801 ms 12 rows/sec. I: 1 U: 0 D: 0
RJ => APM_MASTER_VENDOR 66 row(s) in 16,722 ms 3 rows/sec. I: 0 U: 1 D: 0
RJ => API_CURRENT_TRANSACTION 412 row(s) in 17,434 ms 23 rows/sec. I: 2 U: 0 D: 0
RJ => BLI_NEW_BATCH 9 row(s) in 723 ms 12 rows/sec. I: 0 U: 0 D: 0
RJ => BLW_HISTORY_WORKINPROGRESS 0 row(s) in 804 ms 0 rows/sec. I: 0 U: 0 D: 0
RJ => CTL_TS_INTERFACES 33 row(s) in 1,129 ms 29 rows/sec. I: 0 U: 0 D: 0
RJ => EQT_NEW_BATCH 1 row(s) in 1,544 ms 0 rows/sec. I: 0 U: 0 D: 0
BC => EQT_NEW_GENERAL 1 row(s) in 2,450 ms 0 rows/sec.
RJ => GLT_NEW_BATCH 1 row(s) in 15,632 ms 0 rows/sec. I: 1 U: 0 D: 0
BC => GLT_NEW_GL_T_GENERAL 1 row(s) in 2,176 ms 0 rows/sec.
    
```

- Service Management, Purchasing, and Inventory data is replicated using bulk copy only. New data entered in these modules results in a new copy of the entire table, rather than only the row that was changed. For example, adding a new item to the Parts table in Service Management results in a bulk copy of the PARTS table. Notice that all 92 rows were re-copied.

```

BC => EQT_NEW_GENERAL 1 row(s) in 2,450 ms 0 rows/sec.
RJ => GLT_NEW_BATCH 1 row(s) in 15,632 ms 0 rows/sec. I: 1 U: 0 D: 0
BC => GLT_NEW_GL_T_GENERAL 1 row(s) in 2,176 ms 0 rows/sec.
RJ => GLT_NEW_TRANSACTION 3 row(s) in 15,874 ms 0 rows/sec. I: 3 U: 0 D: 0
RJ => JCM_MASTER_LIEN_WAIVER 76 row(s) in 15,745 ms 4 rows/sec. I: 1 U: 0 D: 0
RJ => JCT_NEW_BATCH 7 row(s) in 14,886 ms 0 rows/sec. I: 1 U: 0 D: 0
RJ => JCT_NEW_TRANSACTION 24 row(s) in 14,713 ms 1 rows/sec. I: 2 U: 0 D: 0
BC => PARTS 92 row(s) in 743 ms 123 rows/sec.
RJ => QXM_MASTER_SECURITYROLE 8 row(s) in 1,886 ms 4 rows/sec. I: 0 U: 0 D: 0
RJ => QXM_MASTER_SECURITYROLESECURITYUSER 7 row(s) in 925 ms 7 rows/sec. I: 0 U: 0 D: 0
RJ => QXM_MASTER_SECURITYUSER 1 row(s) in 15,631 ms 0 rows/sec. I: 0 U: 1 D: 0
    
```

8. Adding an item to the Inventory Parts table results in a bulk copy of the **itmmastr** tabl.

```

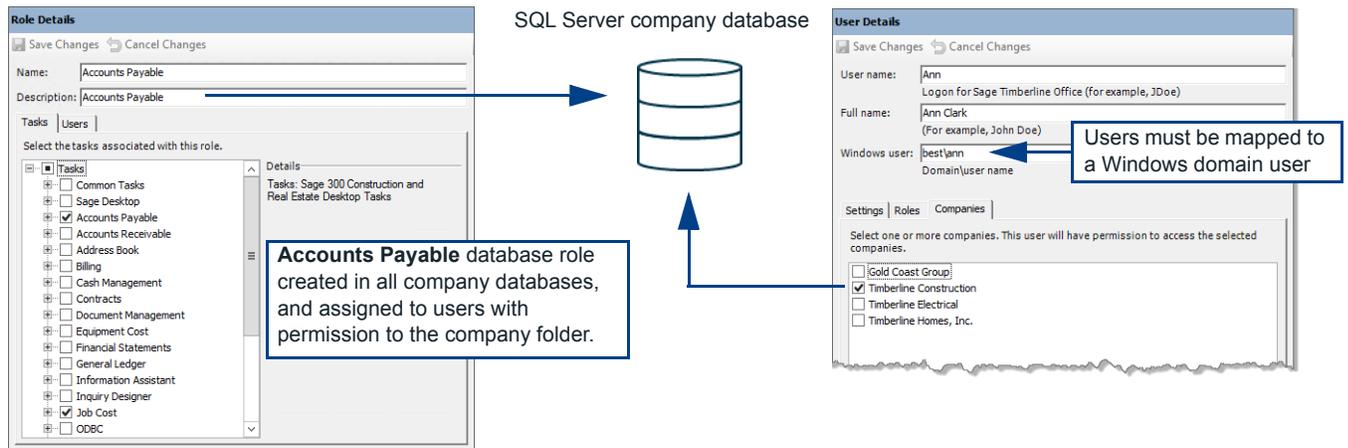
Scan complete: Last completed Sun, 06 Aug 2017 14:29:00 GMT
Scan complete: Last completed Sun, 06 Aug 2017 14:29:10 GMT
Scan complete: Last completed Sun, 06 Aug 2017 14:29:20 GMT
BC => itmmastr          604 row(s) in    1,494 ms          404 rows/sec. 7
Scan complete: Last completed Sun, 06 Aug 2017 14:30:40 GMT
Scan complete: Last completed Sun, 06 Aug 2017 14:30:50 GMT
    
```

## Security and replication

Your security settings in Sage 300 Construction and Real Estate **Security Administration** are enforced by SQL Replicator in the SQL Server data. Any user, role, task, company, and record permissions established in Sage 300 Construction and Real Estate are respected when users access the SQL Server data through Sage Construction Central, reports, or in any other manner. Security settings in the SQL Server database mimic the settings in **Security Administration**, based on the Windows ID associated with the user.

During replication, database roles are added to each company database corresponding to each role you have set up in Sage 300 Construction and Real Estate. For example, if you have a security role called **Accounts Payable** in Sage 300 Construction and Real Estate, a corresponding database role is created in each replicated database in SQL Server.

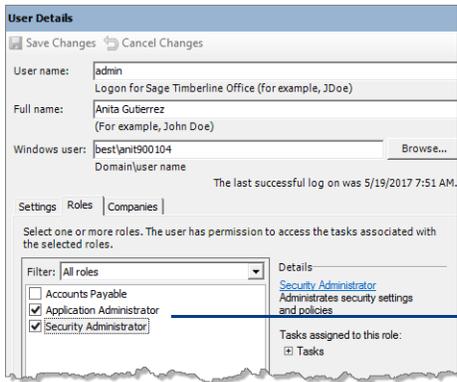
Each Sage 300 Construction and Real Estate user who will access SQL Server company data (including through Sage Construction Central) must be mapped to a Windows domain user. Each Windows user assigned to a security role, and who has permission to the database, is created as a database user and assigned to the corresponding roles.



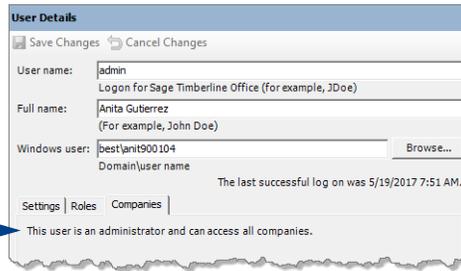
**NOTE:** In Sage 300 Construction and Real Estate security, users and roles are set up once per server. Each user can be granted or denied access to a data folder. SQL Replicator creates corresponding database users in each company database to which the user has access. The database roles are created in each database, even if users are not assigned to the role in a specific company.

Sage 300 Construction and Real Estate users assigned to the **Application Administrator** or **Security Administrator** roles have administrative privileges to all companies. SQL Replicator creates

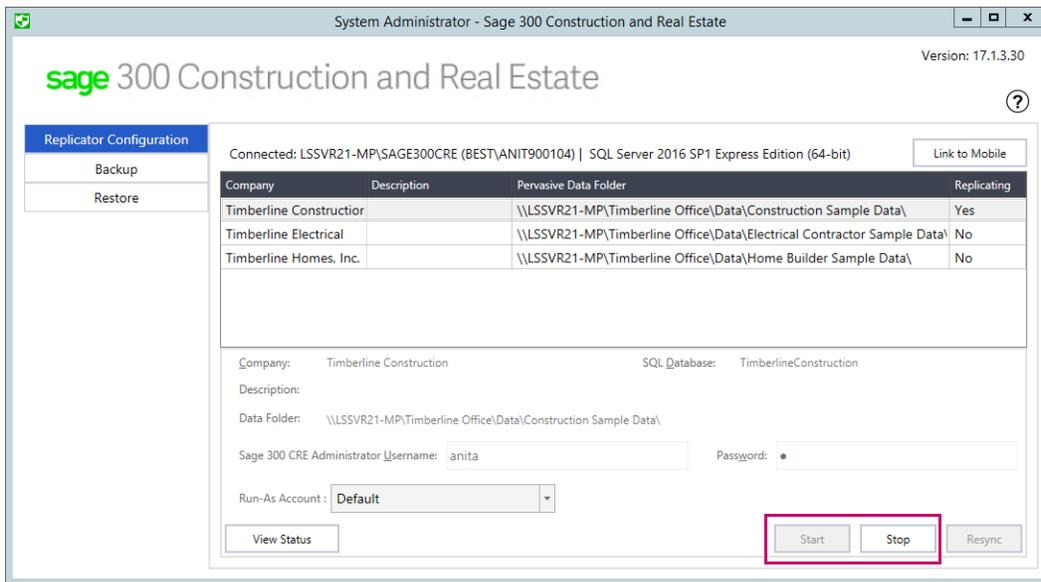
corresponding database roles and assigns these users to their corresponding administrator roles in each SQL Server database.



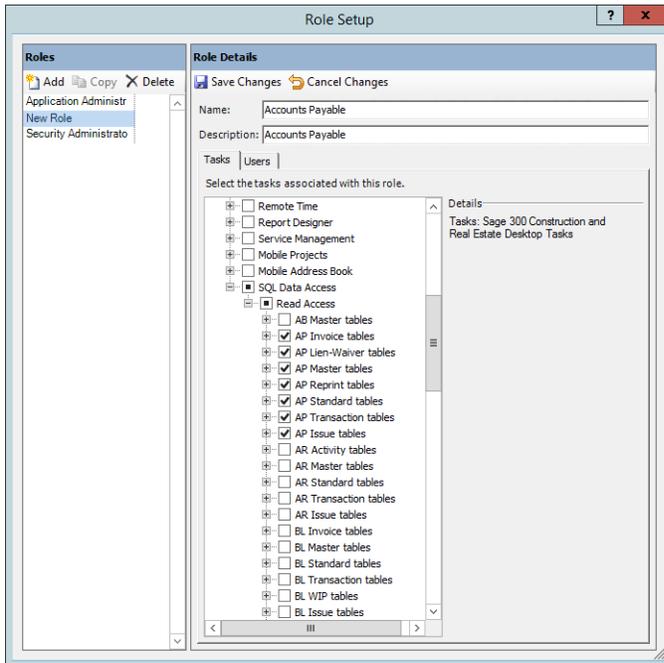
Administrator roles created in each company database.  
Administrative users assigned to correct database roles in all companies.



If you make changes to record security in Sage 300 Construction and Real Estate **Security Administration**, you must re-start replication for each affected company folder. To do this, in **System Administrator**, simply click **Stop** and then **Start**.



In Sage 300 Construction and Real Estate **Security Administration**, new task permissions are available for read-access to the SQL Server tables. These permissions enable the user to access the corresponding views in the SQL Server data, for reporting and other features.



Any changes to roles or users in Sage 300 Construction and Real Estate **Security Administration** are immediately replicated to SQL Server—unless the changes have row-level security implications (such as **Record** or **File** security).



**NOTE:** Social security numbers replicated to SQL Server are encrypted by default. Information about decrypting social security numbers will be added soon.

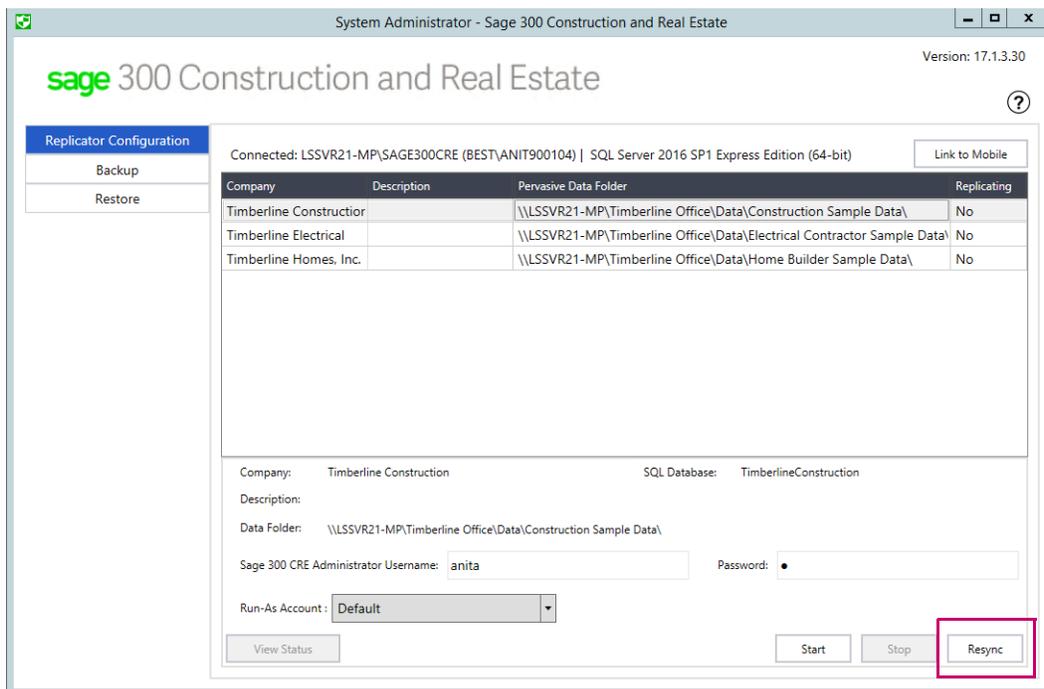
## Re-synchronizing and re-starting replication

The following actions require you to stop and start replication on all company folders. (In System Administrator, click **Stop** and then **Start** for each company folder.)

- Changes to custom descriptions.
- Changes or additions of custom fields.
- Creating a new file, such as an archive file.
- Changes to file or record security.

When replication starts, it reads and stores the database schema. Changes to the schema after replication has started are not picked up until the next time replicator is re-started. This could result in some columns or tables being skipped by replication.

In System Administrator, you can click **Resync** if replication has not picked up schema or security changes and re-starting has not solved the issue.



Re-synchronizing your data results in the following:

1. Any attachments added in SQL Server are backed up.
2. The replicated database is deleted from SQL Server.
3. The data folder is re-replicated.
4. The attachments and attachment links are restored to the new database.

## About Crystal Reports and your replicated data

When working with report designs, you might encounter an issue with the number of objects you can view in Crystal Reports' **Database Expert** window. By default, Crystal Reports displays a maximum of 8,000 objects. You can increase this number by following the instructions in SAP's knowledgebase article [1215994: Unable to see all database objects in Crystal Reports](#). If you modify your installation to show a longer list of tables, it will apply only to the current Windows user's settings. Different users on the same computer would not see the same change unless they also change their configuration.



# System Administrator setup checklist

| Site setup checklist: Complete these steps for your organization                          |                          |
|---|--------------------------|
| 1. Review system requirements (page 5).   | <input type="checkbox"/> |
| 2. Acquire user licenses for the mobile modules in Sage Construction Central.             | <input type="checkbox"/> |
| 3. Upgrade software and data to 17.1.3.   | <input type="checkbox"/> |
| 4. Set up security in Sage 300 Construction and Real Estate. (page 7)                     | <input type="checkbox"/> |
| 5. Use License Administration to allocate mobile licenses to users.                       | <input type="checkbox"/> |
| 6. Install SQL Server using Sage SQL Installer (page 11).                                 | <input type="checkbox"/> |
| 7. Install SQL Server Management Studio (optional).                                       | <input type="checkbox"/> |
| 8. Run File Doctor on data to replicate (with Fix and Compact).                           | <input type="checkbox"/> |
| 9. Configure System Administrator and start replication. (page 15)                        | <input type="checkbox"/> |
| 10. Publish the Sage Construction Central website through Azure Cloud Services. (page 25) | <input type="checkbox"/> |

# Appendix A: Install SQL Server using the Microsoft Installer

In some cases, you might want to install SQL Server yourself rather than allowing Sage SQL Installer to install for you. To install an instance compatible with SQL Replicator, follow the instructions in this section.



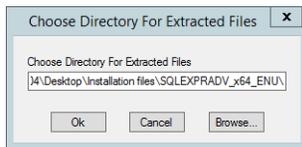
**WARNING:** SQL Replicator requires a specific setting for the server's default collation, which is not the default setting. Instances must have the default collation set at the time of installation—it cannot be changed later. If you try to use a SQL Server instance with the incorrect collation for SQL Replicator, you will not be able to replicate your data. You'll need to re-install SQL Server.

## To Install SQL Server Express

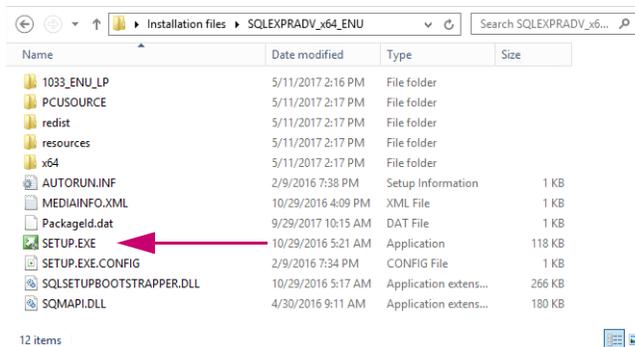


**NOTE:** If you are installing SQL Server using the **Advanced** option of the Sage SQL Installer shown on page 13, skip to step 5.

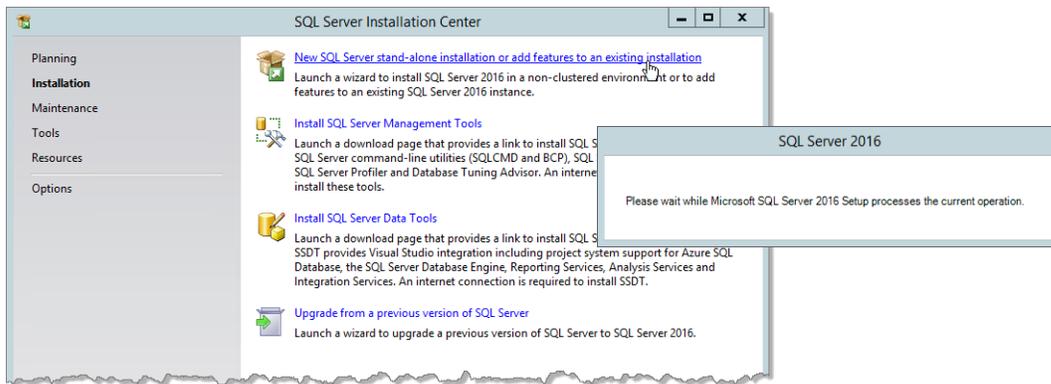
1. Double-click the \*.exe file to extract the contents.
2. When prompted, select a location for the extracted files, and click **OK**.



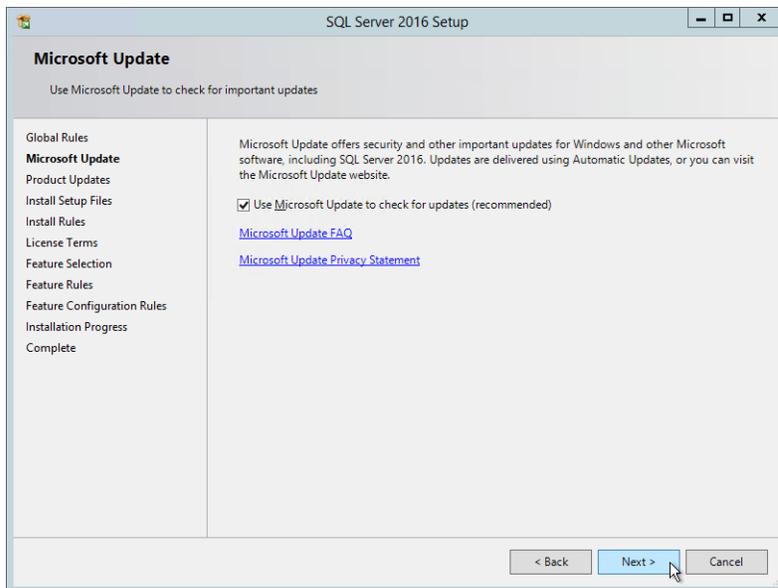
3. When the files are extracted, open the folder location, and double-click **Setup.exe**.



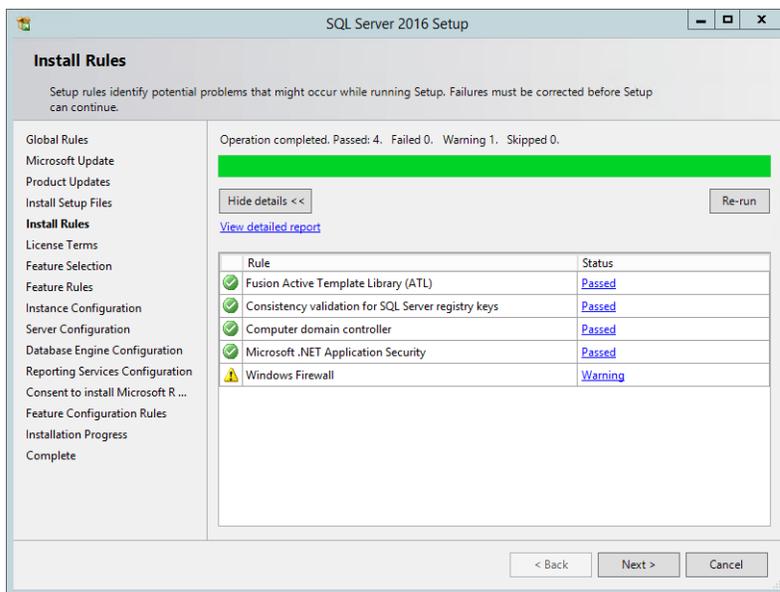
- In the **SQL Server Installation Center** window, click **Installation** on the left, and then click the first option, **New SQL Server stand-alone ...** in the list.



- We recommend that you select the option to **Use Microsoft Update to check for updates**, but this is not required.

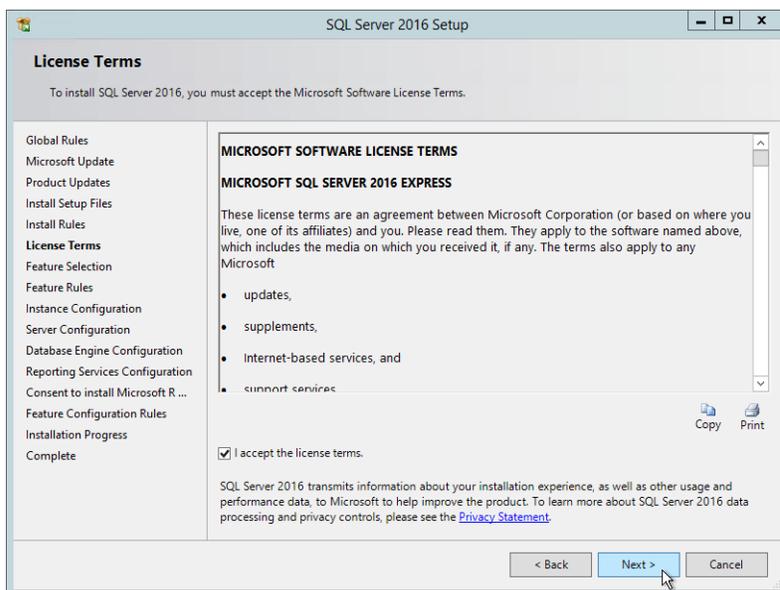


6. Click **Next**. The next window shows the results of the setup rules check. You can ignore warnings about the firewall. If any elements of the check failed, you'll need to fix those issues before you can continue.



7. Click **Next**.

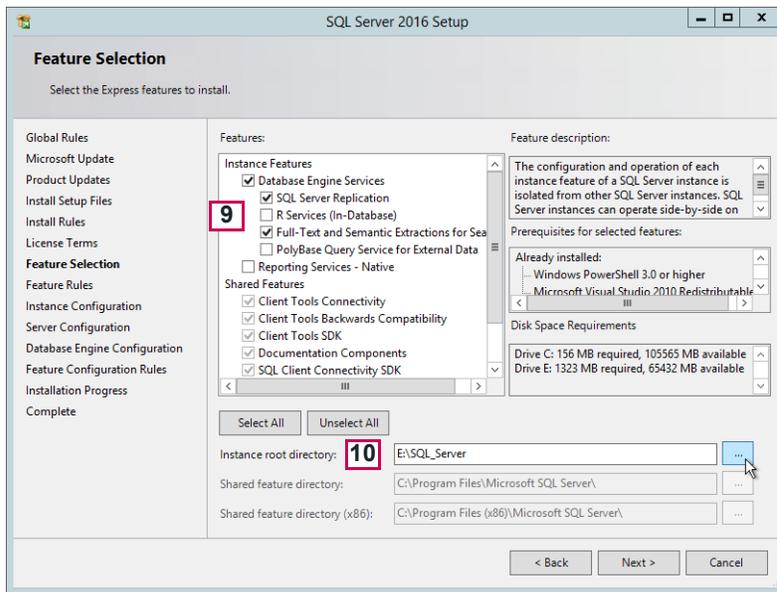
8. In the **License Terms** window, select **I accept the license terms**, and then click **Next**.



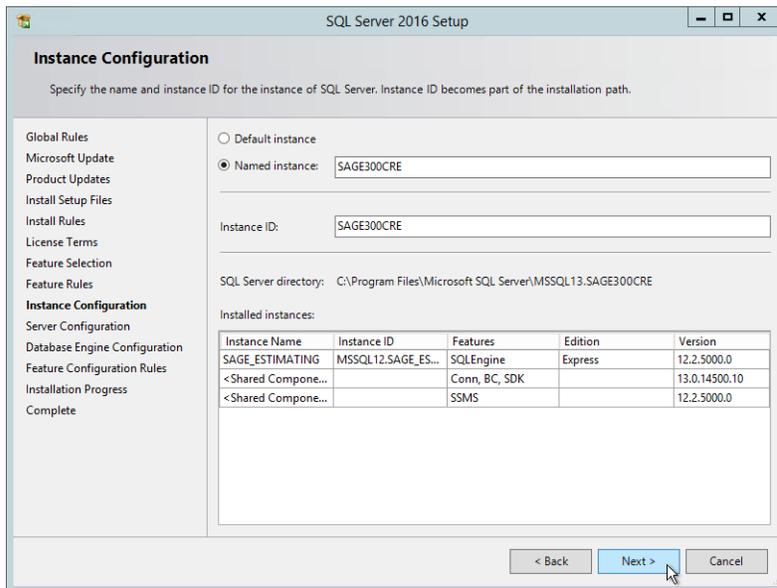
9. In the **Feature Selection** window, at a minimum you must select these check boxes. You can select others if you wish.

- **Database Engine Services**
- **SQL Server Replication**
- **Full-Text and Semantic Extractions for Search.**

- You can change the **Instance root directory** to another local drive or location on your server if you wish. For example, if an SSD is available, using that drive for your root directory can improve performance considerably.



- Click **Next**.
- In the **Instance Configuration** window, we recommend that you install a **Named instance** using the name **SAGE300CRE**. However, you can use a different name, and you can opt to install a default instance instead of a named one.



- Click **Next**.

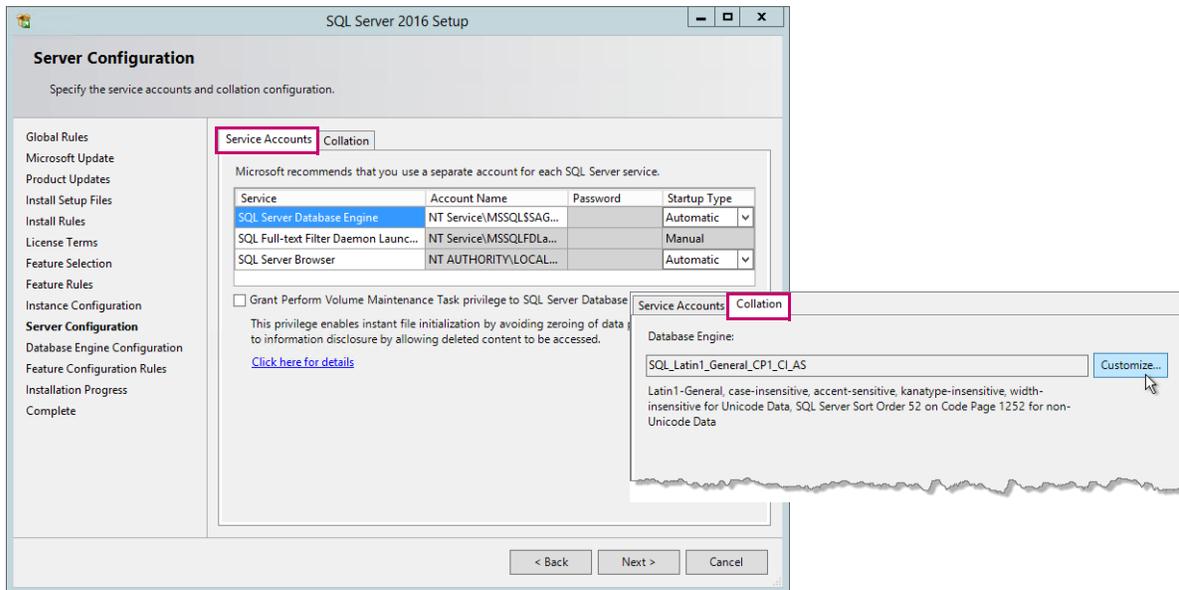


**WARNING:** The settings in the next window are critical to installing a SQL Server instance that will work with SQL Replicator. Configure this window exactly as instructed.

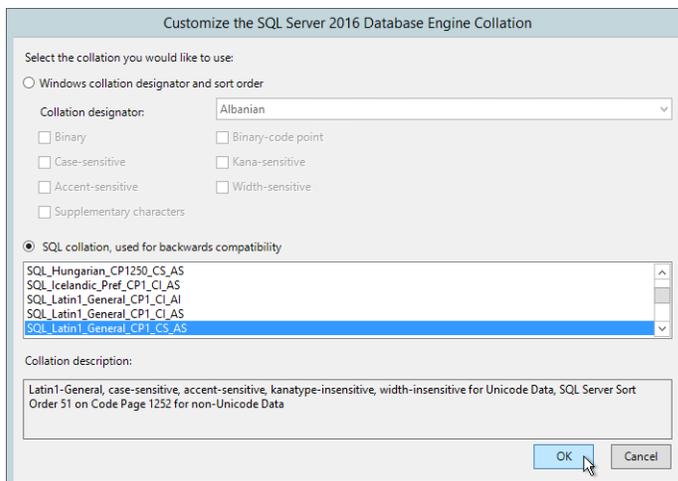
14. On the **Service Accounts** tab, leave the default options as they are, and click the **Collation** tab.



**NOTE:** If you are installing SQL Server using the **Advanced** option of the Sage SQL Installer shown on page 13, skip to step 17. The **Collation** setting is set correctly by default.



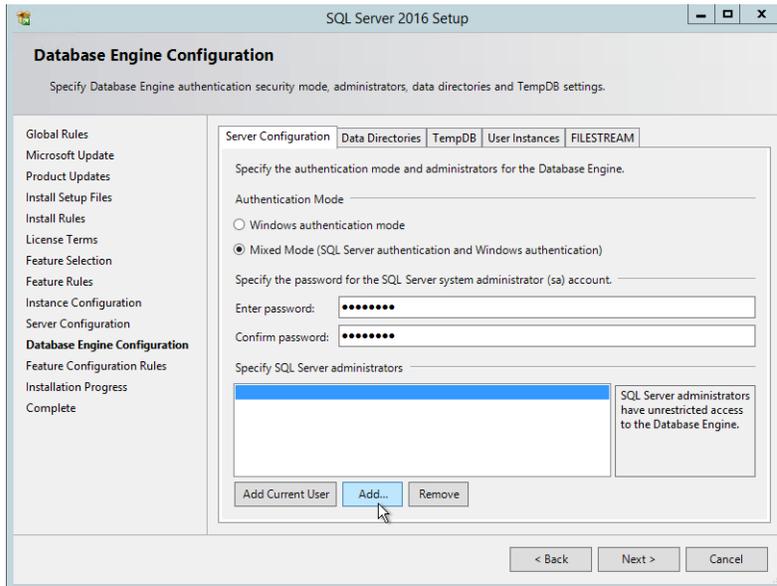
15. On the **Collation** tab, click **Customize**. In the box, select **SQL\_Latin1\_General\_CP1\_CS\_AS**. The last characters should be “CS\_AS” which stands for “case-sensitive, accent-sensitive.” This is the required setting for SQL Replicator.



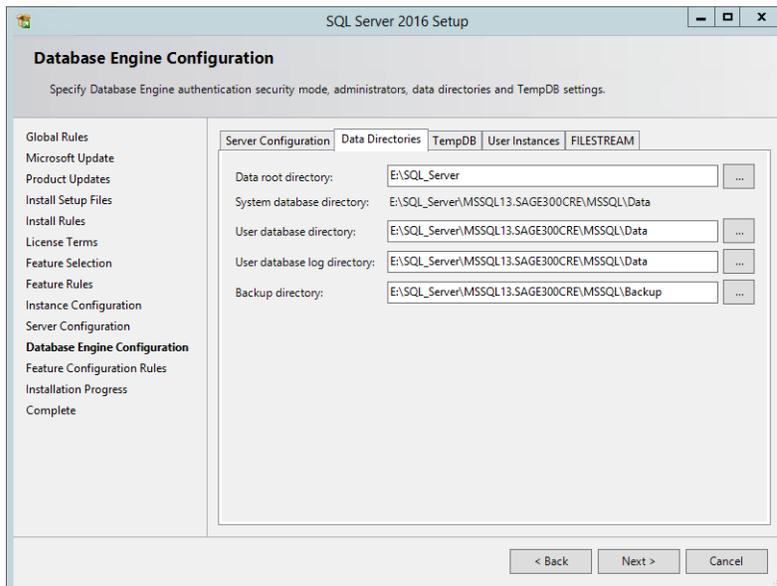
16. Click **OK**, and then click **Next**.

17. In the **Database Engine Configuration** window, you must select **Mixed Mode**. This mode is required for SQL Replicator.

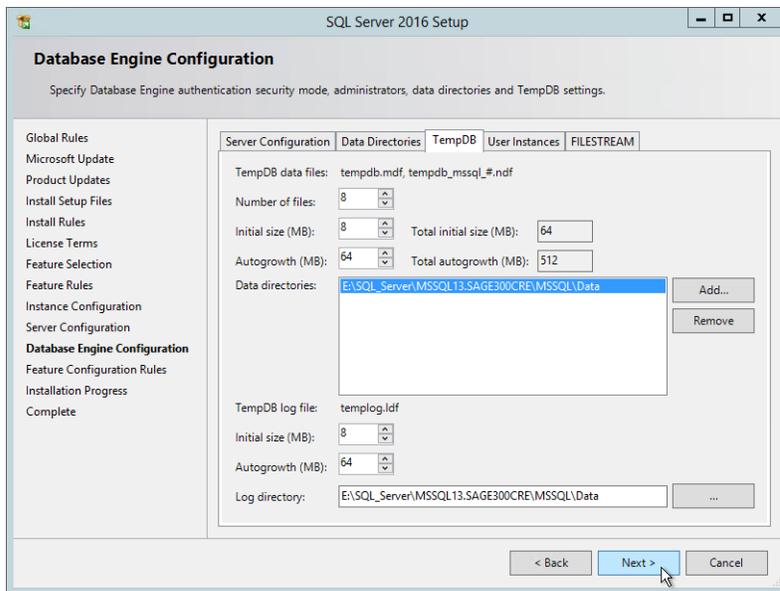
18. Enter and confirm a password for the administrator (**sa**) account.
19. The windows user logged in to the computer will be added automatically as an administrator. Click **Add** to add additional administrators. If you created a Windows domain account as described on page 8, add that account to this list as well.



20. On the **Data Directories** tab, the default location reflects the **Instance root location** you selected in step 10. You can change this to an SSD drive if one is available. This does not have to be a local drive.



21. On the **TempDB** tab, you can add and remove files to store the **tempdb** database on an SSD drive if available.



22. Click **Next**. The next window shows installation progress. When it is finished, click **Close**.

