# Sage CRM 2017 R1
## Installation and Upgrade Guide

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# About this guide

This guide is for Sage CRM system administrators and certified consultants who are familiar with Sage CRM administration tasks, and know how to back up and restore databases. It introduces Sage CRM system architecture and system requirements. It provides detailed instructions for installing and upgrading Sage CRM. The navigation instructions assume that you're using the Contemporary Theme.

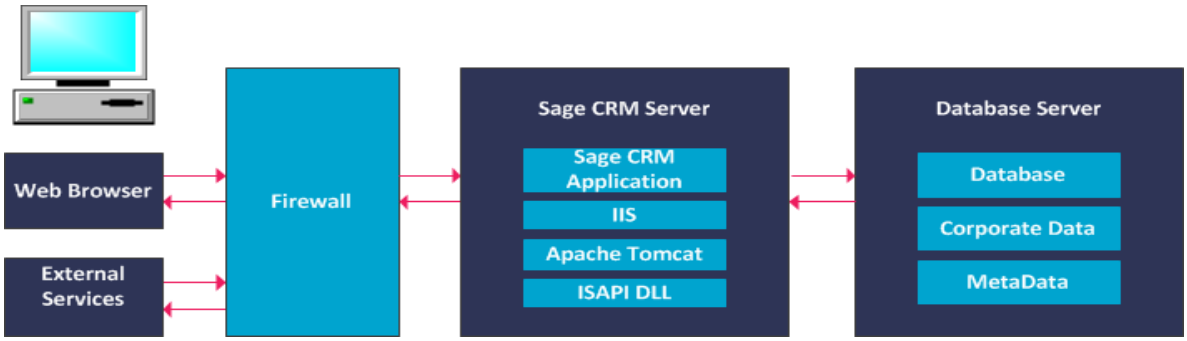
You can use this guide to upgrade Sage CRM installations with standard and non-standard functionality, such as the Extensibility Module, that use any type of database. For information on backing up and restoring specific database types, please consult the IT Administrator at the customer site or the relevant database documentation.

This guide refers to *Sage CRM* but your system might have a different brand name, such as *Sage 200 Sales and Marketing*. The system works in the same way regardless of its name. The functionality that's available to you depends on the modules that you're licensed to use.

# Overview


- System architecture
- Client software requirements
- Client hardware requirements
- Server software requirements
- Server hardware recommendations
- Installing a secure system
- Configuring a secure system

# System architecture




Sage CRM is a 32-bit application which can run on a 64-bit server. Sage CRM installations comprise of a Sage CRM server and a database server. As Sage CRM is a web-based solution, each user needs a web browser and IP connection to the Sage CRM server to access the system.

The Sage CRM server runs the following:

- IIS
- ISAPI DLL which includes HTML / Page generation objects, session / persistence manager, customizable business objects, business logic objects, security manager, and database service objects.
- Apache Tomcat which includes the interactive dashboard, SData manager, Apache POI, Exchange Server Sync Engine, and E-marketing. You can deploy Exchange Server Sync Engine on a remote server. For more information, see the *System Administrator Help* on the Sage CRM Help Center.

The database server is SQL Server. A file share is also required to store library files, although this is generally stored on the Sage CRM server.

External services include the email server, Emarketing platform, GCRM enbabled accounting solution endpoints, and Exchange Server. Data is sent through an optional firewall from the web browser and external services to the Sage CRM server over HTTP (Internet / Intranet) and from the Sage CRM server as HTML, Java Script, Dynamic HTML and style sheets.

Sage CRM connects to the database using Microsoft Data Access Components (MDAC). The latest version of MDAC is installed as part of the Sage CRM setup if it's not already on the system.

# Client software requirements

A web browser is required to use core Sage CRM features and is usually pre-installed on the client.

The Self Service Demo Web Site, Classic Dashboard, CTI, Classic Outlook Integration, and Lite Outlook Integration are supported in Microsoft Internet Explorer 11 only.

The following Sage CRM features require plugins and external applications to be installed on the client machine.

- The Document Drop functionality is available on IE only and requires the Document Plugin. Users are prompted to download the plugin when they try to use a document drop feature. Users must be administrators or power users of their machine to install the plugin, and the web-browser must be configured to accept plugins. As the system administrator, you can restrict access to Document Drop in **<My Profile> | Administration | E-mail and Documents | Documents & Reports Configuration**.
- Adobe Reader is required to view Sage CRM reports in Adobe PDF format. You can download Adobe Reader from www.adobe.com.
- Lite Outlook Integration lets users add contacts to Sage CRM from the Outlook client, file single or multiple Outlook emails to Sage CRM, and attach Sage CRM shared documents to Outlook emails. Lite Outlook Integration does not synchronize any data between Outlook and Sage CRM. For this reason, it should be used with Exchange Integration. In order to use Lite Outlook Integration, the user must download and install a plugin on the Outlook client machine. The plugin works on both 32-bit and 64-bit machines. It installs the .NET Framework if it's not already on the client. Lite Outlook Integration is supported for email accounts running on Microsoft Exchange Server MAPI or POP3 and requires a supported version of Outlook. For more information, see the *Software Support Matrix* on the Sage CRM Help Center. Roaming Profiles are supported.
- Classic Outlook Integration synchronizes contacts, appointments, and tasks between Sage CRM and Microsoft Outlook. In order to use Classic Outlook Integration, the user must download and install a plugin on the Outlook client machine. The plugin works on both 32-bit machines only. It installs the .NET Framework if it's not already on the client. Classic Outlook Integration is supported for email accounts running on Microsoft Exchange Server MAPI or POP3 and requires a supported version of Outlook. Roaming Profiles are not supported.
- Data upload and mail merge require Microsoft Office applications. Data upload accepts *.XLSX files created by Microsoft Office Excel 2007 or later, and *.CSV files. Users can save mail merge templates created in Microsoft Word as *.DOCX, *.HTM, and *.HTML files. Microsoft Word 2007 or later, or another program that can open *.DOCX files must be installed to view merged documents.
- Enhanced display options, such as greater depth of color, are available in charts when Adobe Flash Player is installed on the client and server machines. If Flash is not available, the charts are displayed using HTML 5. You can download Adobe Flash Player from www.adobe.com.

# Client hardware requirements

The client hardware specification is determined by the minimum web browser requirements for the client operating system.

# Server software requirements

The *Software Support Matrix* posted on the Sage CRM Help Center provides an overview of supported software for a standard implementation.

You must set up the Sage CRM server and database server before you install Sage CRM. You can run Sage CRM in a virtual environment. Configuration, setup, and performance of the virtual environment are the responsibility of your IT department.

### Sage CRM server

Enhanced display options, such as greater depth of color, are available in charts when Adobe Flash Player is installed on the client and server machines. If Flash is not available, the charts are displayed using HTML 5. You can download Adobe Flash Player from www.adobe.com.

You must ensure IIS is installed as a Server Role on the Sage CRM server and that ASP, ISAPI Extensions, and ISAPI Filters are selected. Sage CRM 7.3 supports IIS 7.5 and greater. You can import a Secure Sockets Layer (SSL) server certificate into IIS to encrypt sessions between the server and a user.

1. Click **Start | All Programs | Administrative Tools | Server Manager | Roles**.
2. Select **Add Roles** and click **Next**.
3. Click **Web Server (IIS)**.
4. In the Role Services section of the Add Roles Wizard, ensure the following role services are selected.
    - Application Development | ASP .NET
    - Application Development | ASP (set Enable Parent Paths to True)
    - Security | Windows Authentication (if Auto Logon is required)
    - Management Tools | IIS Management Console and IIS Management Compatibility.
5. Ensure that the Anonymous Authentication Credentials are using Application Pool Identity or are hard-coded with a local administrator account. If they are not, you may experience issues when editing CRM System Settings.

### Database servers

- Enable TCP/IP for SQL Server installations.
- Use a dedicated SQL Server user for Sage CRM rather than the *sa* user. Alternatively, ensure there's a back-up user with the same privileges as *sa* in SQL Server. Both measures prevent access issues if the *sa* user gets locked out of Sage CRM.
- In a high-availability environment, Sage CRM can be used with a Microsoft SQL server cluster in an active/passive configuration. This configuration provides resiliency in the database layer. You should configure a Microsoft SQL Server cluster according to Microsoft's specifications and guidelines. Provide the SQL cluster address and SQL logon credentials when prompted in the Database Server Login dialog box during the Sage CRM installation. For more information, see Installing Sage CRM.

- The default setting for the initial database size is 0.5GB (512 MB), but you can change it during installation. Use SQL Express editions for demo installations of Sage CRM only. They are not recommended for production environments because of database size restrictions. SQL Server 2014 allows you to create a 10GB database. You can install SQL Server Express during the Sage CRM installation.
- The Sage CRM installation creates the following default SQL collation on the Sage CRM database.
  - EN – Latin1_General_CI_AS
  - DE – Latin1_General_CI_AS
  - ES – Modern_Spanish_CI_AS
  - FR – French_CI_AS
  - CS – Chinese_PRC_CI_AS

# Server hardware recommendations

The following recommendations assume no other software is installed on the servers. Where a customer installation of Sage CRM is running additional software or web applications, add the requirements of that software to the Sage CRM recommendations.

- For the web server, use disk mirroring (RAID 1). For the database server, use a RAID 10 disk array system so you can swap out a failed drive with minimal disruption to your production environment. A RAID 10 disk array system also improves performance. For larger sites, use a fiber channel SAN.
- Each site must have adequate backup and recovery capabilities.
- Use an Uninterruptible Power Supply.
- Have a hot stand-by system with a backup database that's configured like the primary production system. You can use the standby system for development and testing.
- When estimating the amount of disk storage required, consider the number of customer records, archiving plans, backup policies, and future growth in the volume of data.
- Consider the type of user working with the system. For example, 200 call center users use the system more intensively than 200 sales and marketing users.
- Evaluate customizations when specifying hardware as they can significantly impact the performance of Sage CRM.
- Turn off hyper-threading for older hyper-threading capable CPUs.
- The default database size is 0.5 gigabyte (512 megabytes), but you can change this during the installation process.
- Database server memory size is critical to performance and should be no less than the anticipated database size after one year plus 1 gigabyte. If you expect the database to be 6 gigabytes after one year, plan on a server with at least 8 gigabytes of memory. If this rule of thumb indicates a server with 4 or more gigabytes of memory, you should deploy Windows 2008 R2 or above with 64-bit database software.
- Quick Find uses up to 1 gigabyte of RAM. The exact amount of RAM used depends on the number of records that are indexed.

- The web servers should have at least 8 gigabytes of memory.
- Set up one or more test servers. If you're running bench marking, replicate the server specification and configuration as closely as possible. Future phases of projects and change requests also require a test environment. In addition, set up a test server for each third-party server involved in the deployment of Sage CRM. For example Exchange Server, Accounting server.
- The guidelines in the table below are for call center users on a non-customized system.

| Number of users | Servers | Processors |
|---|---|---|
| Under 50 | You can keep the web server and database server on the same machine if the database size is less than 2 gigabytes. | The machine should have two quad-core processors. The processors do not need to be high specification. |
| Over 50 | Split the database server and web server across two machines. | The machines should have two eight-core processors. Consider higher specification processors to allow for growth in user numbers. |
| Over 200 | Consider multi-server Sage CRM. | The processors in each machine must be high specification. |
| Several hundred | Consider multi-server Sage CRM. | The processors in each machine must be high specification. |

# Installing a secure system

You should follow these best practices to minimize the risks of service interruption and data corruption:

- **Firewall**. Install a firewall if users will access the system remotely. This protects your network from the Internet, ensures only authorized traffic accesses your CRM database, and protects your server from unauthorized users. You can configure rules to restrict traffic and allow traffic originating from a specific source only to protect your server from Internet attacks. You can also install a Firewall in your remote sites and set up Virtual Private Networks (VPNs) to increase data security. Set mobile users as mobile firewall users so they can access the VPN and transmit and receive data securely. Configure the Windows Firewall.
- **Application security**. Assign different levels of access security to users depending on their job role. Enforce mandatory alphanumeric passwords of six characters or more for each Sage CRM user. Use HTTPS protocol to protect data from unauthorized access through the use of an encrypted SSL.

When IIS uses SSL encryption CRM is aware of this and when the client attaches any documents to a form in CRM, it sends it through the encrypted session.

- **Software**. Regularly install software updates and slipstream patches to minimize software security vulnerability. Install recognized anti-virus software. Uninstall unnecessary applications.
- **Backups**. Perform scheduled and manual backups. Establish a regular procedure for backing up the Registry and Program files. Repeat the procedure prior to major customization work or upgrades.
- **Server security**. Separate the domain controller server from the CRM application and database servers. In a Windows Server Systems environment, the Domain Controller (DC) serves as a gatekeeper to the domain resources by storing account information, authenticating users, and enforcing security policies. The defenses offered by a configured DC are further enhanced by placing it behind a robust firewall.
    - Use NT Challenge/Response to allow access to clients with a valid domain login.
    - Use SSL Encryption to secure your data sessions with client users.
    - Configure security policies on Windows Server.
    - Disable or delete unnecessary accounts, ports and services on the server. Disable unnecessary share drives.
    - Configure auditing on the server.
    - Configure encryption on Windows Server.
    - Use the IIS Lockdown and URLScan tools to harden IIS.
- **Database security**. Users do not have direct access to the SQL database. The eWare DLL accesses the database using a predefined logon. When a user requests data, the eWare DLL connects to the database using MDAC and retrieves the required data. For more security you can configure eWare DLL to access SQL using a login with limited access, or access with the appropriate rights to add, change and delete data from every table in the database. Address the potential of remote users obtaining administrator level access to the system by ensuring appropriate passwords are associated with the **sa** account. Further measures, specific to the SQL server, include:
    - Install only required components when installing SQL Server.
    - Run the SQL Server Configuration Manager and SQL Server Surface Area Configuration tools to disable unnecessary features and services.
    - Periodically assess the server's security using the Microsoft Baseline Security Analyzer (MBSA) and SQL Server Best Practice Analyzer.
    - Change the default ports associated with the SQL Server installation to put off hackers from port scanning the server.
    - Remove the BUILTIN/Administrators group from the SQL Server Logins.

# Configuring a secure system

You should follow these best practices to maximize the security of Sage CRM.

- **User authentication**. A user requires a user name and password to access Sage CRM. User passwords are encrypted in the system and in the database for maximum security. You can change a user's existing password but cannot view it. You can set the minimum length and strength of passwords, and specify the number of days before a password expires. For more information, see *Changing password policies* and *Security panel fields* in the System Administrator Help.
- **Security profiles and territories**. You can set up security profiles and territories to manage security access rights across the organization. A profile is a way of grouping users when defining access rights to view, update, insert, or delete records. You can further divide users rights by territory. For example, you can allow users in the Europe territory to view all opportunities in the USA territory, but not update them. Advanced policies let you define complex inter-territory security rights and exception handling. For more information, see *Setting up security profiles* and *Adding new territories* in the System Administrator Help.
- **Field security**. You can set up field security for the Sage CRM system, individuals, teams, and security profiles. For example, you could make a field invisible to some users, allow other users to view the contents of the field but not to change them, and give other users read and write access to the contents. Or you could make it mandatory for the user to enter a value in the field before submitting the form. For more information, see *Using Field Security* in the System Administrator Help.
- **Company team and restricted tabs**. You can restrict user access rights to view and update information depending on company team membership. For more information, see *Security panel fields* in the System Administrator Help.

# Installation


- Installing Sage CRM
- Changing installed components
- Updating the license key
- Reinstalling Sage CRM
- Uninstalling Sage CRM using the uninstall wizard
- Uninstalling Sage CRM manually

# Installing Sage CRM

When installing Sage CRM, use a dedicated SQL Server user for Sage CRM rather than the *sa* user. Alternatively, ensure there's a back-up user with the same privileges as **sa** in SQL Server. Both measures prevent access issues if the **sa** account gets locked out of Sage CRM.

1. Run **Setup.exe** and click **Install Sage CRM**. Click **Next** to move through the installation wizard.
2. Review and accept the software license agreement.
3. Choose **New Install**, confirm your name and company name, and enter your license key. You cannot register your license key more than five times. If you need to register the key more than five times, please contact your business partner.
4. Select the SQL server.
    - If you select **Existing Microsoft SQL Server**, enter the installation name. The SQL server must have a case insensitive collation. Binary or case-sensitive collations are not supported. The default SQL Server port is 1433.
    - If you select **Install Microsoft SQL Server Express**, you're prompted to install the software. The **sa** account password for the SQL Server Express install is *SageCRM#2017*, and the instance name is *CRMEXPRESS2014*. The SQL Server Express port is chosen automatically.
5. Enter the installation name and set the default location for the program files. We recommend you use the default installation name *CRM*. If you enter an alternative name, ensure there are no spaces in the name. IIS looks in the default location for the Sage CRMhome page. Extended characters in the installation path or folder are not supported. To include extended characters, you must implement a workaround, such as running Tomcat as a service using the .NET tool **RunAsService**. This is an open source tool (http://runasservice.sourceforge.net) which registers a .NET Windows service that's configured to run any executable.
6. Confirm the database server name, your SQL Server user ID, and enter your password.
7. Select **Include basic demo data** to get sample companies, leads, opportunities, cases, solutions, communications, people, territories, users, campaigns, and workflows. If you don't include demonstration data, you get sample workflows only.
8. Select optional addons. For example, Sample Self Service support site.
9. Choose a default currency. The default currency is displayed in a read-only format against all currency type fields in Sage CRM. If your implementation deals with multiple currencies, this forms the Base Currency against which all other currencies are calculated. If your default currency is not displayed on the list, click **New**. Add the currency name and internationally recognized code and click **OK**. For example, *Norwegian Krone* and *NOK*. The new currency is displayed in the list.
10. Select the protocol or proxy settings if required.
    - If you select **Use HTTPS** for Sage CRM connections, you must manually configure Secure Sockets Layer (SSL) on the web server (IIS) used by Sage CRM and create an SSL binding for the CRM site. For more information, see How to Set Up SSL on IIS 7.
      After you enable HTTPS, update the *HTTPPort* and *OutlookPort* entries in the Custom_

Sysparams table in Sage CRM with the port you configured in the SSL binding settings.

- If you select **Use proxy** for Internet access, enter the proxy server address and port and authentication details.

11. Opt in or out of web analytics, review the current settings, and click **Yes** to stop IIS.
    Web analytics does not collect any personally identifiable information. Rather, web analytics collects data on how Sage CRM user interface elements are used. By opting into web analytics, you can help make Sage CRM better.
12. Complete the registration details, and click **Finish**. If registration is unsuccessful, you can manually register in **<My Profile> | Administration | System | License Key Details**.
13. If you're installing Sage CRM on a separate machine to the database server, you must install Microsoft SQL Client Tools to connect Sage CRM to the database server. Open the command prompt and run the following command against the copy of SQL Server Express that's included with Sage CRM:
    ```
    Setup.exe /qs /ACTION=Install /FEATURES=CONN
    /IACCEPTSQLSERVERLICENSETERMS
    ```

**Note:** You can install Sage CRM 2017 R1 on a machine that's running Sage CRM 7.3 but you must install Sage CRM 7.3 before you install Sage CRM 2017 R1.

# Changing installed components

You can change specific components in Sage CRM without performing a full upgrade. You can reinstall the database, registry, program files, IIS aliases, and license key. Changing the license key lets you add on Sage CRM features that weren't purchased as part of the original license, or you can increase the number of licensed users. You can use the install shield or the License Key Update application to update the license key. For more information, see Updating the license key.

1. Run **Setup.exe** and click **Install Sage CRM**. Click **Next** to move through the installation wizard.
2. Review and accept the software license agreement.
3. Choose **Change existing install of CRM**.
4. If there's more than one Sage CRM installation, select the installation you want to upgrade.
5. Select the components you want to reinstall. We recommend that you backup components that are affected before you proceed.
6. If you select **License Key**, you're prompted to enter the new license key. Any differences between your previous license and the new license are listed.
7. If you select a database, confirm the database server name, your SQL Server user ID, and enter your password.
8. Select **Include basic demo data** to get sample companies, leads, opportunities, cases, solutions, communications, people, territories, users, campaigns, and workflows. If you don't include demonstration data, you get sample workflows only.
9. Select optional addons. For example, Sample Self Service support site.

10. Choose a default currency. The default currency is displayed in a read-only format against all currency type fields in Sage CRM. If your implementation deals with multiple currencies, this forms the Base Currency against which all other currencies are calculated. If your default currency is not displayed on the list, click **New**. Add the currency name and internationally recognized code and click **OK**. For example, *Norwegian Krone* and *NOK*. The new currency is displayed in the list.
11. Select the protocol or proxy settings if required.
    - If you select **Use HTTPS** for Sage CRM connections, you must manually configure Secure Sockets Layer (SSL) on the web server (IIS) used by Sage CRM and create an SSL binding for the CRM site. For more information, see How to Set Up SSL on IIS 7.
      After you enable HTTPS, update the *HTTPPort* and *OutlookPort* entries in the Custom_ Sysparams table in Sage CRM with the port you configured in the SSL binding settings.
    - If you select **Use proxy** for Internet access, enter the proxy server address and port and authentication details.
12. Click **Yes** to stop IIS and then click **Finish**.

# Updating the license key

You can use the License Key Update application to change the Sage CRM license key. This lets you add on Sage CRM features that weren't purchased as part of the original license, or increase the number of licensed users.

1. Navigate to your install location and open the **License Update** folder.
    - **On a 32-bit system:** %ProgramFiles%\Sage\CRM\<InstallName>\License Update
    - **On a 64-bit system:** %ProgramFiles(x86)%\Sage\CRM\InstallName>\License Update
2. Run **licensekeyupdate.exe**.
3. Enter the new license key.
4. Click **Next** and complete the wizard.

# Reinstalling Sage CRM

You can reinstall an existing Sage CRM installation. The existing installation is completely overwritten.

1. Run **Setup.exe** and click **Install Sage CRM**. Click **Next** to move through the installation wizard.
2. Review and accept the software license agreement.
3. Choose **Complete Reinstall**, confirm the database server name and your SQL Server user ID, and enter your password.
4. Select **Include basic demo data** to get sample companies, leads, opportunities, cases, solutions, communications, people, territories, users, campaigns, and workflows. If you don't include demonstration data, you get sample workflows only.

5. Select optional addons. For example, Sample Self Service support site.
6. Choose a default currency. The default currency is displayed in a read-only format against all currency type fields in Sage CRM. If your implementation deals with multiple currencies, this forms the Base Currency against which all other currencies are calculated. If your default currency is not displayed on the list, click **New**. Add the currency name and internationally recognized code and click **OK**. For example, *Norwegian Krone* and *NOK*. The new currency is displayed in the list.
7. Select the protocol or proxy settings.
   - If you select **Use HTTPS** for Sage CRM connections, you must manually configure Secure Sockets Layer (SSL) on the Web Server (IIS) used by Sage CRM and create an SSL binding for the CRM site. For more information, see How to Set Up SSL on IIS 7.
     After you enable HTTPS, update the *HTTPPort* and *OutlookPort* entries in the Custom_ Sysparams table in Sage CRM with the port you configured in the SSL binding settings.
   - If you select **Use proxy** for Internet access, enter the proxy server address and port and authentication details.
8. Opt in or out of web analytics, review the current settings, and click **Yes** to stop IIS.
9. Click **Finish**.

# Uninstalling Sage CRM using the uninstall wizard

1. Click **Start | Control Panel | Uninstall a Program | Sage CRM**.
2. Click **Uninstall**. Click **Next** to move through the uninstall wizard.
3. Confirm your server name and your SQL Server user ID, and enter the password for this user ID.
4. If you have more than one Sage CRM installation, select the installation you want to remove from the Uninstall list.
5. If the installation is a Self Service or multi-server CRM install, click **Yes** to confirm you want to uninstall it.
6. Confirm the components that will be uninstalled.
7. Click **Yes** to stop IIS.
8. Select **View uninstall log file** to view logging information and click **Finish**. The log file is displayed. If you need to delete any files manually, details are specified in the log.

# Uninstalling Sage CRM manually

The steps listed below use the default installation name (CRM) and the WINNT system directory.

1. To remove all CRM services (Escalation, Integration, Email Manager, and Indexer) and the Apache Tomcat service, open the command prompt and type
   *..\Program Files(x86)\Sage\CRM\Services>crmindexerservice.exe /U*
   *..\Program Files(x86)\Sage\CRM\[install name]\tomcat\bin>service.bat remove [install name] Tomcat7*
2. To unregister the DLL, click **Start | Run** and type:
   *regsvr32 "..\Program Files(x86)\Sage\CRM\CRM\WWWRoot\eware.dll" /u*
   Enclose the path in quotation marks to allow for the space between Program and Files. When the **RegSvr32** dialog box is displayed, click **Yes**.
3. To delete the CRM connection, click **Start | All Programs | Administrative Tools | Internet Information Services (IIS) Manager**. Expand the **Connections** tree in the left pane to open **Default Web Site** and delete the CRM entry.
4. To delete the CRM database, click **Start | Programs | Microsoft SQL Server | Enterprise Manager**. Expand the **Databases** tree in the left pane and delete the CRM entry.
5. To remove the registry entries for a single installation, click **Start | Run**. Type *Regedit* and click **OK**. Expand **HKEY_LOCAL_MACHINE/SOFTWARE/** and delete the **eWare** folder.
6. To remove the registry entries for multiple installations, click **Start | Run**. Type *Regedit* and click **OK**. Expand **HKEY_LOCAL_MACHINE/SOFTWARE/eWare/Config** and delete the appropriate key. Expand **HKEY_LOCAL_MACHINE/SOFTWARE/eWare/Mapping** and delete the appropriate key.
7. To delete the CRM installation directory, click **Start | Run**, type *net stop iisadmin /y* and click **OK**. The web service stops. Go to **... \Program Files\Sage\CRM\CRM** and delete the folder containing CRM installation files. Then go to **C:\winnt\system32** and delete **eware.cpl**.
8. Reboot your computer.

# Server Administration


- Scheduling a database backup task
- Setting up a database maintenance plan
- Overview of manual backups
- Backing up the database manually
- Backing up the registry manually
- Backing up program files manually

# Scheduling a database backup task

You can schedule a CRM database backup task using SQL Server. You should run the backup task every night and include the backup files in any server backup procedures you have, such as storage to a tape drive or remote disk. For the latest SQL Server backup procedures, see the manufacturer's web site and documentation.

# Setting up a database maintenance plan

You should set up a database maintenance plan. For detailed information on setting up a plan for SQL Server, see the manufacturer's web site.

The table below illustrates a sample database maintenance plan for an SQL Server install.

| Task | Hourly | Nightly | Weekly | Monthly |
|---|---|---|---|---|
| Database consistency check | | | X | |
| Shrink database | | | | X* |
| Reorganize indexes | | X | | |
| Rebuild indexes | | | X | |
| Update statistics | | X | | |
| Database backup – Full | | | X | |
| Database backup – Differential | | X** | | |
| Database backup – Transaction log | X | | | |
| Maintenance clean-up | | | X | |

*Or longer – Regularly shrinking a database fragments the drive on which it is running, which reduces performance. If the database and transactional log file backups are carried out, the Shrink Database task may not be required.

** Except the night on which the full database is backed up.

# Overview of manual backups

When performing an upgrade, you are prompted to let Sage CRM make an automatic backup of the database and registry. In addition to this automatic backup, we recommended you perform a manual backup of the database, registry, and program files before beginning any work on an upgrade. You should also perform a manual backup before implementing any customization work in a live environment.

A manual backup allows you to preserve a complete set of system, database, and registry files that can be stored independently of the upgrade environment. This provides added security against data loss during the upgrade procedure.

A manual backup also allows you to restore the customer's environment in-house, creating a mirror image of the customer's existing Sage CRM environment. You can then carry out the upgrade procedure and post upgrade testing in-house, or on a test server at the customer site.

# Backing up the database manually

1. Ensure the location where you'll save the backup files has sufficient storage space.
2. Open the Database Administration tool and back up the database.
3. Save the restored database files to the backup folder.
4. Zip up the database backup files to save space.
5. Delete the unzipped database backup file. If you experience any difficulties when backing up the database, contact the IT administrator at the customer site.

# Backing up the registry manually

1. Ensure the location in which you'll save the backup files has sufficient storage space.
2. From the desktop on the Web Server, click **Start | Run**.
3. Type *Regedit* and click **OK**. The Registry Editor opens.
4. Go to **HKEY_LOCAL_MACHINE\SOFTWARE\eWare\Config\<Install Name>**
5. Click **File | Export**.
6. Enter a file name in **File Name**, browse to the backup location and click **Save**.
7. In the Registry Editor, go to **HKEY_LOCAL_MACHINE\SOFTWARE\eWare\Mappings** and select the file that corresponds to the install you're upgrading.

8. Click **File | Export**.
9. Enter a file name in **File Name**, browse to your backup location, and click **Save**.

# Backing up program files manually

1. Ensure the location where you'll save the backup files has sufficient storage space.
2. Browse to the Sage CRM install files.
3. Create a zip file containing the install name folder and all sub-folders.
4. Save the zip file to your backup location.

# Upgrading

- Test upgrades
- Live upgrades

# Test upgrades


- Preparing for a test upgrade
- Installing backups to the test environment
- Performing a test upgrade


## Preparing for a test upgrade

A test environment lets you carry out trial runs of the upgrade procedure, and to test upgraded customizations, regularly used functionality, and data integrity in a controlled, non-live environment. By dealing with upgrade errors in the test environment, you minimize the likelihood of downtime when you perform a live upgrade.

To help avoid problems associated with poor upgrades, we recommended you first create a manual backup of the Sage CRM program files, registry, and database. Then set up a test environment that mirrors the live environment. The accuracy of test results decreases as the test environment diverges from the live environment. Perform a test upgrade on the test environment and test it. When you're happy with the results of the test upgrade, perform the live upgrade.

Things to note when preparing for a test upgrade include:

- **Licensing**. A separate license key is required for the test install. Your local Sage Op-Co can provide you with a trial license key free of charge. This key can be made to mimic the live license key functionality exactly, and should include the Extensibility Module. It expires three months after installation.
- **Software Installation**. To successfully mirror the live environment, install Microsoft IIS, database management software (for example, SQL Server), and a clean install of the existing version of Sage CRM on the test server. Restore the current live database, the live registry, and the program files to the test environment.
- **Server**. The test environment should not reside on the same server as the live Sage CRM web server or SQL server, as variables added into a live environment increase the chance of downtime. For example, if an IIS reset is required on the test web server, and the client is running Sage CRM on the same server, the production system will be impacted.
- **Baseline testing**. When you've set up the test environment, test commonly used Sage CRM functionality and components to ensure the test environment is functioning as an exact mirror of the live environment. For example, if you generate particular reports on a daily basis, test this procedure on the test environment. If the test environment is at the customer site, have Sage CRM users perform their regular tasks on the test environment. Don't spend a lot of time testing functionality that's never used by the customer.
- **Script customizations**. If the client's license includes the Extensibility Module, you can script any changes to Sage CRM into an ES file. Include the Extensibility Module in the test license to ensure

that customizations made in the test environment can be carried across to the upgraded live environment.

# Installing backups to the test environment

Before performing a test upgrade, install the backup files to the test environment to ensure it mirrors the live environment.

1. Install a trial installation of the current version of Sage CRM. The trial key must have the same number of users and the same optional functionality as the key used in the live environment.
2. Stop IIS.
3. Restore the database backup that you've taken from the live environment. For more information, see Restoring the database backup.
4. Restore the registry backup. For more information, see Restoring the registry backup.
5. Copy the system files that you've backed up from the backup area to the test environment.
6. Re-register eware.dll. For more information, see Reregistering the installation.
7. Restart IIS.

# Performing a test upgrade

- The procedure for performing a test upgrade is the same as the procedure for performing a live upgrade. For more information, see Upgrading Sage CRM.
- When the test upgrade has finished, view the upgrade log files for errors that occurred during the upgrade. For more information, see Reviewing the upgrade log.
- Test the upgrade to identify and correct bugs and errors. Focus your testing on frequently used functionality and components. For more information, see Testing a live upgrade.
- Perform the live upgrade only when you're completely satisfied that the test upgrade has been successful.

# Live upgrades

- Preparing for a live upgrade
- Upgrading Sage CRM
- Reviewing the upgrade log
- Upgrade scripts
- Testing a live upgrade
- Sample upgrade checklist

# Preparing for a live upgrade

- You need a 2017 R1 license key for the upgraded version.
- Indexes or statistics are not removed from databases during upgrade. A database column with a statistic or index may cause an error during the upgrade process. Delete any automatically created indexes or statistics (begining with "_dta_index_" or "_dta_stat_") that cause problems and then run a database optimization process after the install. For example, the MSSQL Database Tuning Advisor.
- Users and administrators can access Welcome Dashboards after upgrading to 2017 R1. They are displayed by default if there was no default dashboard set in 7.3. If there was a default dashboard, the Welcome Dashboard is included in the dashboard drop-down list.
- If you plan to upgrade after office hours, retrieve the license key and test it during office hours so you can address any problems while assistance is available. To test the key, start the upgrade. If the key is not accepted, cancel the upgrade and contact your license key provider. If the key is accepted, cancel the upgrade.
- IIS is stopped during an upgrade. This affects customer sites if there are other web applications running on the same server as Sage CRM. You should install Sage CRM on a dedicated server if possible.
- Notify end users that they'll be unable to use Sage CRM during the upgrade.
- Perform a manual backup of the database, registry, and program files. For more information, see Overview of manual backups.
- Back up customized system views as they may be overwritten during the upgrade.
- Upgrade to the very latest Sage CRM release, up to and including the latest patch service pack.

# Upgrading Sage CRM

The install wizard upgrades from 7.2 or 7.3 to 2017 R1. You should make a full backup of your data before upgrading.

1. Run **Setup.exe** and click **Install Sage CRM**. Click **Next** to move through the installation wizard.
2. Review and accept the software license agreement.
3. Choose **Upgrade previous version of CRM**, confirm your name and company name, and enter your license key.
4. Confirm the database server name, your SQL Server user ID, and enter your password.
5. Select **Backup existing copy of the database, program files and registry** and specify the backup location for the database.
6. Select optional add ons. For example, Sample Self Service support site.
7. Select the protocol or proxy settings if required.
    - If you select **Use HTTPS** for Sage CRM connections, you must manually configure Secure Sockets Layer (SSL) on the web server (IIS) used by Sage CRM and create an SSL binding for the CRM site. For more information, see How to Set Up SSL on IIS 7.
      After you enable HTTPS, update the *HTTPPort* and *OutlookPort* entries in the Custom_

Sysparams table in Sage CRM with the port you configured in the SSL binding settings.

- If you select **Use proxy** for Internet access, enter the proxy server address and port and authentication details.

8. Opt in or out of web analytics and review the current settings.
9. Disable triggers if required and click **Yes** to stop IIS.
10. Choose to open the upgrade log and to launch the system.
11. After upgrading, clear your browser cache once for an optimized view of Sage CRM. The steps for clearing the cache depending on the browser you're using. For example, in IE11, go to **Tools | Safety | Delete Browsing History**, select **Temporary Internet Files** and click **Delete**. For details, see the browser help.
12. Enable triggers if you disabled them earlier in this procedure.

# Reviewing the upgrade log

1. Go to **..\Program Files(x86)s\Sage\CRM\[install name]\Setup** and open **upgradelog.html**. Review the upgrade log to ensure all elements, such as views, tables, indexes, index constraints, and registry keys, have been fully upgraded. The Upgrade Summary panel lists scripts that were run during the upgrade and indicates whether they were successful. For more information, see Upgrade scripts.
2. Check the CRM script logs in the top left panel and click a link to view a summary report. Click **Expand All** and review each section of the report.
3. Check the SQL script logs in the bottom left panel and click a link to view the log file.
4. If errors occurred while an SQL script was running, an html file with an asterisk symbol (*) is generated. Click the html link to view a summary of the error. Manually correct any problems with a **NB must be fixed** message.

# Upgrade scripts

The following scripts run when you run the upgrade install wizard:

- **CustomPages.es** updates the Sage CRM internal custom pages.
- **Custom_Captions.es** adds new captions and translations to the system.
- **updatehelplink.es** inserts all new help files content.
- **update_metadata.es** updates and cleans all metadata.
- **addConstraints.es** applies database integrity constraints.
- **views.es** runs and upgrades system views.
- **user_views.es** runs and upgrades customizable Sage CRM user views.
- **Tables.es** updates the schema, adds new tables, columns, and adjusted columns.
- **Update_indexes_mssql.sql**

# Testing a live upgrade

It's a good idea to discuss testing requirements with the customer before you upgrade the system. Your post-upgrade testing should focus on the following:

- Functionality that's used frequently by the customer.
- Advanced customizations. In general, testing customer customizations should take a large amount of the allotted test time.
- Data integrity. Carry out data checks to ensure that upgraded data appears as expected.

| Test Action | Success |
|---|---|
| Log on is successful | |
| Mail merge / document drop functionality working, and with the correct plugin | |
| Report writer presenting in all formats (HTML, PDF, CSV, XLSX) | |
| Email management functioning as expected, including customizations | |
| Functionality regularly used by the customer working as expected | |
| Previous functional integration with third-party database functioning as expected | |
| Advanced customizations (.ASP pages) functioning as expected | |
| Custom icons copied to new install location | |
| Outlook and Exchange Integration functioning as expected | |
| All plugins (Outlook, xEwareControl Version, and CTI) updated and working as expected | |
| All plugins compatible with, and match, the upgraded version of Sage CRM | |
| Library location is correct | |
| Add/Find/Edit/Delete records for each entity working as expected | |
| System help functioning as expected | |
| Data upload functioning as expected | |
| Interactive dashboard loads successfully (**My CRM \| Dashboard**) | |
| Interactive dashboard loads successfully in the Company context (**Company context \| Dashboard**), and the default dashboard is the Company Summary dashboard | |

# Sample upgrade checklist

| Test Action | Complete |
|---|---|
| **Manual backup – pre-test upgrade** | |
| Complete backup of Sage CRM database | |
| Complete backup of Sage CRM program files | |
| Complete backup of Sage CRM registry key | |
| **Generate test environment** | |
| Source trial license key for current version (with EM) | |
| Source trial license key for upgrade version (with EM) | |
| Install dependent third party software on test environment | |
| Install current Sage CRM version using trial license key | |
| Restore manual backup database to test environment | |
| Delete vSentinal out of the views in the restored Sage CRM database | |
| Restore Sage program files to test environment | |
| Confirm Windows NT security has been correctly set | |
| Restart IIS | |
| Complete base line testing (UAT test) | |
| Script customizations using component manager and Zip | |
| **Test upgrade** | |
| Complete install shield upgrade to current version | |
| Upgrade to latest service pack of Sage CRM | |
| **Upgrade logs** | |
| Review upgrade logs for errors | |
| Investigate each error and document resolution or outcome | |
| Complete resolutions for each error | |

| Test Action | Complete |
|---|---|
| **Function testing** | |
| Complete generic functionality testing | |
| Complete additional functionality testing | |
| Document and resolve any functional irregularities | |
| **Client customization testing** | |
| Complete visual scan of screen customizations | |
| Complete custom functionality testing | |
| Document and resolve any custom irregularities | |
| **Data integrity testing** | |
| Complete random sampling of 20 company records | |
| Client completes data integrity testing | |
| Document and resolve any data irregularities | |
| **Freeze live system** | |
| Estimate downtime for production system and document risks to client | |
| Obtain client sign off to move forward with live upgrade | |
| Lock users out of the Sage CRM system as server is taken offline | |
| **Live manual backup – pre live upgrade** | |
| Complete backup of Sage CRM database | |
| Complete backup of Sage CRM program files | |
| Complete backup of Sage CRM registry key | |
| **Live upgrade** | |
| Complete install shield upgrade to current version | |
| Upgrade to latest service pack of Sage CRM | |
| **Upgrade logs** | |
| Review upgrade logs for errors | |
| Investigate each error and document resolution or outcome | |

| Test Action | Complete |
|---|---|
| Complete resolutions for each error | |
| **Live manual backup – post live upgrade** | |
| Complete backup of Sage CRM database | |
| Complete backup of Sage CRM program files | |
| Complete backup of Sage CRM registry key | |
| **Function testing** | |
| Complete generic functionality testing | |
| Complete additional functionality testing | |
| Document and resolve any functional irregularities | |
| **Client customization testing** | |
| Complete visual scan of screen customizations | |
| Complete custom functionality testing | |
| Document and resolve any custom irregularities | |
| **Data integrity testing** | |
| Complete random sampling of 20 company records | |
| Client completes data integrity testing | |
| Document and resolve any data irregularities | |

# Restoring a Live Environment

If a live upgrade fails, or if there are problems with functionality in a new upgrade, we recommend that you return the customer site to the pre-upgrade live environment while any problems are addressed. This will minimize downtime at the customer site.

To restore a live environment, complete the following steps:

- Reregistering the installation
- Restoring the database backup
- Restoring the registry backup
- Redirecting the website
- Stopping and restarting IIS

# Reregistering the installation

1. Click **Start | Run**.
2. Type *regsvr32 C:\Program Files\Sage\CRM\<install name>_backup* and click **OK**.
3. Click **OK** to complete the registration.

# Restoring the database backup

1. Open the Database Administration tool.
2. Save the restored database files to the backup folder.
3. Restore the backed up database to the previously installed version. For information about restoring backed up databases, see your database administration documentation. If you experience difficulties restoring the database, contact the IT Administrator at the customer site.

# Restoring the registry backup

1. On the web server desktop , click **Start | Run**.
2. Type *Regedit* and click **OK**.
3. Browse to **HKEY_LOCAL_MACHINE\SOFTWARE\eWare\Config** and click **File | Import**.
4. Browse to where you've backed up the registry, select the registry file and click **Open**.
5. Click **OK** to complete the registry import.
6. Browse to **HKEY_LOCAL_MACHINE\SOFTWARE\eWare\Mappings** and click **File | Import**.
7. Browse to where you've backed up the registry, select the mappings file and click **Open**.
8. Click **OK** to complete the mappings import.

# Redirecting the website

1. Open **IIS Manager**.
2. Browse to **Sites | Default Web Site | CRM Install**.
3. Right-click the install name and click **Manage Application | Advanced Settings**.
4. Enter the path to the backed up website in **Physical Path**.
5. Click **OK**.

# Stopping and restarting IIS

1. Click **Start | Administrative Tools | IIS Manager**.
2. To stop IIS, click **Stop**.
3. To restart IIS, click **Restart**.

# Multi-server Sage CRM


- Multi-server Sage CRM prerequisites
- Installing multi-server Sage CRM
- Configuring multi-server Sage CRM
- Load balancing in a multi-server environment
- Preparing for upgrading multi-server Sage CRM
- Upgrading multi-server Sage CRM
- Installing Sage CRM on the database server
- Installing Sage CRM on a non-database server

# Multi-server Sage CRM prerequisites

You can implement Sage CRM in a fully distributed environment, where a single database is accessible through multiple servers. Performance is enhanced due to efficient load balancing that's performed by Sage CRM or a dedicated load balancing application.

- You need a valid license that includes multi-server Sage CRM. Your license key can be used on all servers in the cluster.
- Identify the servers in the cluster on which you'll install Sage CRM and identify the database server on which the database will be created. In a typical multi-server Sage CRM environment, CRM install files are created on web/application servers and the database resides on a separate, dedicated database server.
- Identify the servers in the cluster on which CRM services such as the Indexer, Escalation, and Email Manager will run. They are installed only once and usually run on the first (primary) web server, but in a multi-server Sage CRM environment they can split across other application servers in the cluster. For example: Application server 1 (primary web server) - Email manager, Application server 2 - Indexer service, Application server 3 - Escalation service

# Installing multi-server Sage CRM

Install Sage CRM on the primary web server. The first install installs the CRM database to the database server. This is the only web server on which you install the database for the multi-server Sage CRM installation. Follow the instructions in the installation wizard for a typical Sage CRM installation. Note the installation name as you'll need this when installing the other servers.

You should install only one single Replication Engine instance on the primary server. To ensure that installing subsequent nodes won’t break any existing Exchange synchronizations:

1. Disable the integration from SCRM UI on the first server.
2. Install the next node.
3. Stop **<installname>Tomcat7 Windows service**.
4. To remove the Replication Engine from the new node, remove **c:\Program Files (x86)\Sage\CRM\<installname>\tomcat\webapps\<installname>ExchangeSyncEngine.war** and **c:\Program Files (x86)\Sage\CRM\crm\tomcat\webapps\<installname>ExchangeSyncEngine** folder.
5. Start **<installname>Tomcat7 Windows service**.
6. Enable integration on the first node.

Then install Sage CRM on the other web servers in the cluster. Follow the instructions in the installation wizard for a typical Sage CRM installation. Do not register these web servers. Set the installation name and

database server name to the values used for the primary web server. Do not install the database on these web servers.

A Tomcat service is installed on the web server to support the Interactive Dashboard and SData features . In a multi-server CRM environment, the Tomcat service is installed in **..Program Files(x86)\Sage\CRM\ [installname]\tomcat** on each web server in the cluster. If changes are made to custom tables on the database, the Tomcat service and the **eware.dll** on each web server reloads its metadata. Ensure the database server has enough concurrent connections to reload the sum of one DLL per web server plus one Tomcat database connection pool per web server.

For the Document Library feature to work correctly in multi-server environments, you must define a shared UNC network path with the appropriate access rights to the Library folder.

1. Click **<My Profile> | Administration | Email and Documents | Documents & Reports Configuration.**
2. Click **Change**.
3. Enter the network path in **Physical root directory for mail merged documents**.
4. Enter the network path in **Default document templates location for mail merge**.
5. Click **Save**.

# Configuring multi-server Sage CRM

Database configuration settings are automatically set up when you install multi-server Sage CRM. The default database for each Sage CRM server in the multi-server environment is the name of the original Sage CRM installation. This is the database to which all the servers connect.

Any changes you make on a Sage CRM server are reflected on all other Sage CRM servers in the cluster. Metadata is refreshed on all servers if you perform any customization.

If you perform an IIS reset or a recycle of the application pool on the servers in the cluster, you must log on to each server in the cluster manually in order for load balancing to operate normally.

You can edit the multi-server Sage CRM configuration settings for the server on which the database is installed.

1. Click **<My Profile> | Administration | System | Database**.
2. Click **Change**.

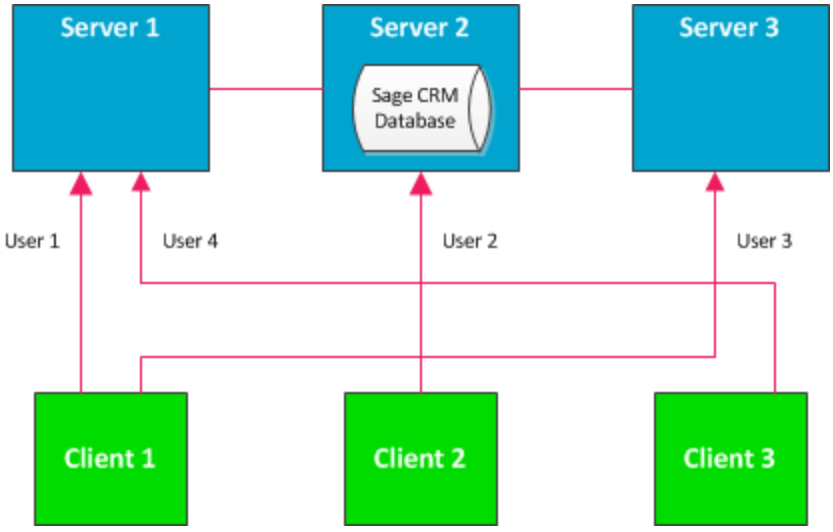
| Field | Description |
|---|---|
| CRM Server Names | The names of the Sage CRM servers in the cluster separated by semi colons. |
| Do Load Balancing | • **True**. Sage CRM performs load balancing.<br>• **False**. A load balancing application performs load balancing. |

| Field | Description |
|---|---|
| DTLS Server Name | The name of the server on which all Table Level Scripts are performed.<br>If this is an HTTPS server, the server name must be the name specified on the server's SSL certificate. |
| Fully qualified CRM Web Server Names | The complete domain name for web servers, consisting of the hostname and domain name. An example is mymail.sage.com, where the hostname is “mymail” and the host is located in the domain “sage.com”.<br>If any of these servers require HTTPS, the server name must be the name specified on the server's SSL certificate. |

# Load balancing in a multi-server environment

If a user tries to log on to Sage CRM when load balancing is enabled, a list of available servers is obtained from the custom_sysparams table. The number of users logged on to each server is calculated, and the server with the lowest number of logged on users is identified. The Sage CRM logon page is submitted to this server and when the user is logged on, the server name is displayed in the URL.

The diagram below illustrates load balancing when four users attempt to log on to Sage CRM in a multi-server Sage CRM environment.




In this scenario, load balancing has been configured on a cluster of three servers: Server 1, Server 2, and Server 3. Each server can access the Sage CRM database which resides on Server 2. User 1 logs on from Client 1, then User 2 logs on from Client 2, then User 3 logs on from Client 1, and then User 4 logs on from Client 3.

Users are logged onto the database as follows:

- User 1 and User 4 are logged on to the Sage CRM database by Server 1.
- User 2 is logged on to the Sage CRM database by Server 2.
- User 3 is logged on to the Sage CRM database by Server 3.

# Preparing for upgrading multi-server Sage CRM

- You require a 2017 R1 license key to upgrade to 2017 R1.
- Your license key can be used on all servers in the cluster.
- Before beginning an upgrade, ensure all servers (with the exception of the database server) are disconnected from the database.
- You can point multiple Tomcat servers at one database if the database provides enough connections to serve the multiple connection pools. Each Tomcat server opens a connection pool of 10 connections by default.

# Upgrading multi-server Sage CRM

- Create a manual backup of the database from the database server. For more information, see Overview of manual backups.
- For all Sage CRM servers in the cluster, including the database server, create manual backups of the program files and the registry.
- Set up a test environment that mimics the live environment as closely as possible. For example, if there are four servers in your multi-server cluster, set up four test servers, with each one an exact (or close) copy of a live server. For more information, see Performing a test upgrade.
- Perform a test upgrade on the test environment.
- Test the test upgrade.
- When you're happy with the results of the test upgrade, perform a live upgrade on each Sage CRM server, starting with the database server. For more information, see Installing Sage CRM on the database server and Installing Sage CRM on a non-database server.
- Test the live upgrade. For more information, see Testing a live upgrade.

# Installing Sage CRM on the database server

Click **Next** to step through the installation wizard.

1. Run **Setup.exe** and review and accept the Software License Agreement.
2. Select **Upgrade Previous Version of CRM**.
3. Choose the install you want to upgrade and enter your name, company name, and license key as provided by the vendor.
4. Confirm your database server name, port number and your SQL Server user ID, and enter the password for this user ID.
5. Select **Backup Existing Copy Of The Database, Program Files, And Registry**.
6. Browse to the backup location for the database.
7. Click **Yes** to stop IIS and continue the installation. When this process has finished, a dialog box is displayed to confirm where the program files, database, and registry have been backed up.
8. Click **OK**.
9. Complete all fields on the Registration page. The registration details are sent to the Sage CRM registration server as a background process. If this is not successful, the registration can be completed manually from within Sage CRM in **<My Profile> | Administration | System | License Key Details**.
10. Select **Finish** to complete the installation process. The Readme file and the Logon page are displayed.

# Installing Sage CRM on a non-database server

Click **Next** to move through the installation wizard.

1. Run **Setup.exe** and review and accept the Software License Agreement.
2. Select **Upgrade Previous Version of CRM**
3. Choose the install you want to upgrade and enter your name, company name, and license key as provided by the vendor.
4. Click **Yes** and select **Backup is not Required**.
5. Click **Yes** to stop IIS and continue the installation.

6. Select **Launch Sage CRM Now** and **View Upgrade Log Files**.
7. Click **Finish**. The Sage CRM log on page is displayed in a new browser window.

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