

Sage CRM 7.3 SP1

Installation and Upgrade Guide

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Chapter 1: About This Guide

This guide is for Sage CRM System Administrators and Sage CRM Certified Consultants and is intended as an introduction to the Sage CRM system architecture and system requirements, as well as providing detailed instructions on installing or upgrading Sage CRM. The navigation instructions in the guide assume that you're using the Contemporary Theme. For more information, see *Themes* in the System Administrator Guide.

Please note that while the document refers to Sage CRM, CRM, or the CRM system throughout, regional products may use different brand names.

We assume that you are an experienced Sage CRM System Administrator or Certified Consultant, and are familiar with:

- The administration tasks covered in the Sage CRM System Administrator Guide.
- Backup and restoration procedures for SQL databases, or whatever database type you are working with.

Chapter Summary

Chapter	Description
System Overview	An introduction to the system architecture and recommended client and server specifications.
Installation	How to install the software using the Setup program.
Server Administration	Backup recommendations.
Multi-server CRM	An introduction to CRM in a multi-server environment.
Introduction to Upgrading	Recommended steps in the upgrade process.
Running a Test Upgrade	Requirements for setting up a test environment and procedures for running a test upgrade.
Upgrading Sage CRM	How to perform and test an upgrade.
Restoring a Live Environment	How to restore a live environment in the event of a failed upgrade.
Upgrading Multi Server CRM	How to upgrade a multi-server CRM environment.
Upgrade Checklist	A list of key milestones in the upgrade process.
Troubleshooting	Troubleshooting tips.

Chapter 2: System Overview

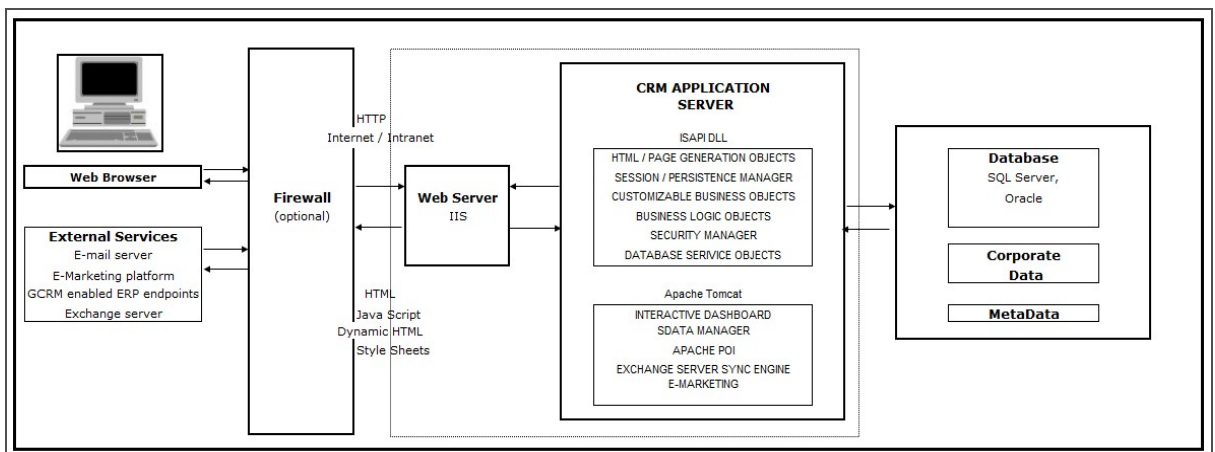
In this chapter you will learn how to:

- Get an overview of the system architecture.
- Find out what software is required for CRM clients.
- Determine what hardware is required for CRM clients.
- Find out what server software is required.
- Run CRM on a 64-bit server.
- Run CRM on Windows Server.
- Run CRM on Windows Server Essentials.
- Find out what server hardware is recommended.

System Architecture Overview

This system is a Web-based solution that requires no separate installation on client machines. To access the system, each user must have a Web browser and IP connection to the CRM Application Server.

The following diagram provides an overview of the technical architecture.



System Architecture Overview

Note: The Exchange Server Sync Engine can be deployed on a remote server. Please see the Exchange Integration section of the *System Administrator Guide* for more information.

Client Software Requirements

No installation is required on the PC or laptop of networked users for core CRM functions, as the Web browser is usually pre-installed. Some features of CRM, such as Document Drop, Reporting,

and Classic Outlook Integration may require the installation of plug-ins and external applications. These are outlined in the next section.

The following Web browser is supported:

- Microsoft Internet Explorer 11

Note: If you experience performance issues with IE, it may be due to the number of HTTP connections open at any one time (for example, multiple tabs within a single browser session, one of which is CRM, with a dashboard including multiple RSS feeds). To prevent this issue affecting CRM performance, it is recommended that CRM is opened in its own browser window.

Cross-Browser Compatibility

The Main Menu area of Sage CRM is compatible with the following browsers:

- Apple Safari 7
- Microsoft Edge
- Google Chrome (latest version)
- Mozilla Firefox (latest version)

There are still some minor differences to look out for in the Main Menu area. The main ones are:

- Hot Keys – different hot keys, such as Alt + T to create a new task from the Calendar tab in IE, can be used in the different browsers. Please refer to the User Guide for more information about them.
- The Send Using Outlook button on the New E-mail screen is not supported in non-IE browsers

There are some areas of the product which are supported in IE only. These include:

- The Administration menu
- Self Service Demo Web Site
Note: In a production environment, you can access the Self Service Web Site with any of the supported web browsers listed in the Sage CRM Software Support Matrix.
- Classic Dashboard
- Classic Outlook Integration
- Outlook Plug-in for Exchange
- Lite Outlook Plug-in (Cloud)
- CTI

Files and Applications you may need on the Client

Document Plug-in: To use the Document Drop functionality. Only available when working with CRM in Internet Explorer. The first time a user encounters one of the features requiring the plug-in (for example, the My CRM | Calendar page displaying the Document Drop icon), they are prompted to download a plug-in. Instructions are provided on-screen. Users must be administrators or power users of their machine to install the plug-in. Your browser must also be configured to accept plug-ins. Access to Document Drop can be disabled by the System Administrator from **<My Profile> | Administration | E-mail and Documents | Documents & Reports Configuration**.

Adobe Reader: To view CRM reports in Adobe PDF format, Adobe Reader must be installed on the client machine. The Adobe Reader can be downloaded from www.adobe.com.

Outlook Plug-in for Exchange Integration: Your System Administrator can roll out the Outlook plug-in for Exchange Integration by Active Directory Group Policy, or you can install it manually. To install manually, users must be administrators or power users of their machine, be running Outlook 2010, 2013, or 365, and must have been enabled by their System Administrator to view the plug-in button.

Outlook Plug-in for Classic Outlook Integration: To install CRM Outlook Integration, users download the Outlook Plug-in for Classic Outlook Integration from within CRM in the **<My Profile> | Preferences** tab. Users must be administrators or power users of their machine to install the Outlook Plugin. The Outlook Plugin requires XML Parser and the .NET Framework to be on the client. These are checked for during the install process and installed if not present.

Note: Users are required to have either Outlook 2010, 2013, or 365 to use Classic Outlook Integration. Sage CRM Outlook client integration is supported for e-mail accounts running on Microsoft Exchange Server MAPI or POP3. Roaming Profiles are not supported.

Microsoft Office applications: The data upload feature accepts files in *.XLSX format, created by Microsoft Office Excel 2007 or later versions. Data Upload also accepts *.CSV files. You can save mail merge templates that you create in Microsoft Word in *.DOCX, *.HTM, and *.HTML formats. Microsoft Word 2007 or later, or another program that can open *.DOCX files, must be installed in order to view merged documents.

Adobe Flash: The Adobe Flash Player is not required for either running or interacting with report charts. Some enhanced display options, such as greater depth of color, are available in charts when the Adobe Flash Player is installed on the client machine. If Flash is not available, the charts are displayed using HTML 5. The Adobe Flash can be downloaded from www.adobe.com.

Recommendations for Client Hardware

As the application uses a Web browser, the client hardware specification is determined by the minimum Web browser requirements for the client operating system.

Server software

The [Support Matrix](#) provides an overview of supported software for a standard implementation.

You must install all application server, database server, and Web server products before you install the application. In addition to Sage CRM license costs, customers must independently purchase licenses for this software. This should be organized by your IT department using their established suppliers. It may be possible to reuse licenses purchased for other applications if they're not currently being used.

Sage CRM can be run in a virtualized environment. Configuration, setup, and performance of the virtual environment are the responsibility of your IT department.



To display charts in a PDF report that's run from Sage CRM, you must install Adobe Flash on the Sage CRM server.

Database Servers

- **TCP/IP** must be enabled for **SQL Server** installations.
- **Microsoft SQL Server cluster** In a high-availability environment, Sage CRM can be used with a Microsoft SQL server cluster in an active/passive configuration. This configuration will provide resiliency in the database layer of your solution.
 - You should configure a Microsoft SQL Server cluster according to Microsoft's specifications and guidelines.
 - Installing Sage CRM onto a Microsoft SQL server cluster works in the exact same manner as installing Sage CRM onto a single Microsoft SQL Server instance. 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 [Running the setup program \(page 4-2\)](#).
- **Database Size** The default setting for the initial database size is 0.5GB (512 MB), but this can be changed during the installation process.
 - SQL Express Editions should only be used for demo installations of Sage CRM, and are not recommended for use in Production environments. The primary reason for this is owing to the database size restrictions.
 - SQL Server 2014 allows for the creation of up to a 10GB database.
- **Database Collation** The Sage CRM installation creates its own SQL collation on the CRM database. In previous versions, it inherited it the collation from SQL Server (at the database server level). Localized installs of CRM should run more smoothly as a result. The CRM install creates the following default collations:
 - EN – Latin1_General_CI_AS
 - DE – Latin1_General_CI_AS
 - ES – Modern_Spanish_CI_AS
 - FR – French_CI_AS
 - CS – Chinese_PRC_CI_AS

Web Servers



Sage CRM 7.3 supports IIS 7.5 and greater.

- Ensure the following components are selected under **Internet Information Services | World Wide Web Services | Application Development Tools**:
 - ASP
 - ISAPI Extensions
 - ISAPI Filters
- If you are using the Extensibility Module, check that **IIS | Web Service Applications | Active Server Pages** is not set to **Prohibited**.
- Check that the **Enabled Parent Paths** option is enabled. If it's disabled, you may experience errors when working with Self Service and custom ASP pages. For more information, see <http://support.microsoft.com/>.

CRM Installations on a 64-Bit Server

Windows and IIS

Sage CRM is compatible with:

- Microsoft SQL Server 2014.
- IIS 7.5 and greater.

CRM is a 32-bit application which can run on a 64-bit server. If you are installing on Windows 2008 R2 x64 or on Windows 2012 x64, you need to do the following after the install for all application pools under the DefaultWebSite.

To enable 32 bit ISAPI.dll to run on IIS x64:

1. Click the **Application Pools** node.
2. Select the **AppPool** item you want to change.
3. Select **Advanced Settings** from the Actions panel.
4. On the Advanced Settings dialog box, set **Enable 32-bit Applications** to **True**.
5. Click **OK**.

Sage CRM installations on Windows Servers

If you are installing Sage CRM on Windows Server and have no database installed, you must install the Microsoft .NET Framework 3.5 Service Pack via the server feature in order for Microsoft SQL Server Express to install.

To install the .NET Framework 3.5 Service Pack on Windows Server:

1. Click **Start | Administrative Tools | Server Manager**
2. From the Features Summary panel, click **Add Features**.
3. Select **.NET Framework 3.5.1 Features**.
4. Click **Install**.

Before installing CRM, ensure that IIS is installed as a Server Role.

1. Click **Start | All Programs | Administrative Tools | Server Manager | Roles**.
2. Select **Add Roles**. The Add Roles Wizard is displayed.
3. Click **Next**.
4. Click **Web Server (IIS)**.

Then, in the Role Services section of the Add Roles Wizard, make sure that the following role services are selected for your install:

- 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.



You must ensure in IIS that the Anonymous Authentication Credentials are using Application Pool Identity or are hard-coded with a local administrator account, otherwise you may experience issues when editing CRM System Settings.

CRM Installations on Windows Server Essentials

The following steps are prerequisite to getting Sage CRM running on Windows Server Essentials:

1. Install CRM.
2. In IIS | Application Pools | Default Application Pool | Advanced Settings | Set **Enable 32 Bit Applications to True**.
3. Turn off **UAC** in the Control Panel | User Accounts.
4. Launch CRM, if you get "Service Unavailable HTTP Error 503. The service is unavailable", change the following line in your application Host.config file, which is located **%windir%\system32\inetsrv\config**:

- **From:** <add name="PasswordExpiryModule" image="C:\Windows\system32\RpcProxy\RpcProxy.dll" />
- **To:** <add name="PasswordExpiryModule" image="C:\Windows\system32\RpcProxy\RpcProxy.dll" precondition="bitness64" />

Note: This step may not be necessary on a clean SBS Standard machine, as the precondition "bitness64" is set by default.

5. Launch CRM.
6. If you get "HTTP Error 500 - Internal Server Error", run the following command to turn off HTTP compression:

```
%windir%\system32\inetsrv\appcmd.exe set config -  
section:system.webServer/httpCompression /-[name='xpress']
```

7. Reset IIS.
8. Launch CRM.

Troubleshooting Windows Server Essentials

Follow these steps if you get one of the following errors, "HTTP Error 500 - Internal Server Error" or "HTTP Error 503 - Service unavailable":

1. Launch the **Event Viewer** (eventvwr.msc),
2. Expand Windows Logs and look for errors in Application logs. You might see some errors related to owaauthdll.
3. Change the following line in your application Host.config file, which is located at **%windir%\system32\inetsrv\config**:

- From: `<filter name="Exchange OWA Cookie Authentication ISAPI Filter" path="C:\Program Files\Microsoft\Exchange Server\V14\ClientAccess\owa\auth\owaauth.dll" enabled="true"/>`
 - To: `<filter name="Exchange OWA Cookie Authentication ISAPI Filter" path="C:\Program Files\Microsoft\Exchange Server\V14\ClientAccess\owa\auth\owaauth.dll" enabled="true" preCondition="bitness64" />`
4. Reset IIS and check if your CRM is working fine.
 5. If not, fix any other errors you might see in the Event Viewer. Remember to reset IIS after each change. For example, you might need to add preCondition to other .dll files:
 - `<add name="kerbauth" image="C:\Program Files\Microsoft\Exchange Server\V14\Bin\kerbauth.dll" preCondition="bitness64"/>`
 - `<add name="exppw" image="C:\Program Files\Microsoft\Exchange Server\V14\ClientAccess\Owa\auth\exppw.dll" preCondition="bitness64" />`
 - `<add name="SharePoint14Module" image="C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\14\isapi\owssvr.dll" preCondition="appPoolName=SharePoint Central Administration v4,bitness64;SBS Sharepoint AppPool" />`

Recommendations for Server Hardware

Sage CRM installations comprise of a web / application server that run IIS and Apache Tomcat, and of a database server to store the records. A file share is also required to store library files, although this is generally stored on the web server.

The following sections provide general recommendations for CRM installations, as well as specifications for large CRM installations. These recommendations assume no other software is installed on the servers. Where a customer installation of Sage CRM is running additional software or web applications, the person installing Sage CRM must add the requirements of that additional software to these Sage CRM recommendations.

General Recommendations

- For the web server we recommend using disk mirroring (RAID 1). For the database server we strongly recommend using a RAID 10 disk array system. The RAID 10 allows you to swap out a failed drive with minimal disruption to your production environment and improves performance. Larger sites should consider the use of a fibre channel SAN.
- Each site must have adequate backup and recovery capabilities.
- We recommend that you use an Uninterruptible Power Supply.
- We strongly suggest that you have a "hot stand-by" system that has a backup database. This standby system should have a very similar configuration to the primary production system. The standby system can also be used for development and testing.

- The amount of disk space required varies widely based on the number of customer records, archiving plans, and backup policies. The disk space can also vary widely based on the amount of information held for each customer. Therefore, it is important to try to estimate this prior to installation and purchase sufficient disk storage to allow for significant growth in the volume of data.
- It is important to keep in mind what type of user will be working with the system. For example, 200 call center users use the system more intensively than 200 sales and marketing users.
- The guidelines given below are for call center type users on a non-customized system. Please bear in mind that product customizations can significantly impact the performance of Sage CRM and should be carefully evaluated when specifying hardware.
- For older hyper-threading capable CPU's, hyper-threading should be turned off.

Server Memory

The default setting for the initial database size is 0.5GB (512MB), but this can be changed 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.

The web servers should have at least 8 gigabytes of memory.

Installations with Under 50 Users

Servers. You may keep the web server and database server on the same machine provided the database size is less than 2 gigabytes.

Processors. The machine should have 2 quad core processors, but need not be high spec, e.g. Intel Xeon E5-2643.

Installations with Over 50 Users

Servers. Split the Database server and Web server across two machines.

Processors. The machines should have 2 eight core processors, e.g. Intel Xeon E5-2690 but higher spec processors should be considered to allow for growth in user number.

Installations with Over 200 Users

Processors. The processors in each of the machines must be high specification, for example Intel Xeon E5-2690.

Installations with Several Hundred Users

Processors. The processors in each of the machines must be high specification, for example Intel Xeon E5-2690. The database server should be dual eight core, i.e. Intel Xeon E7-2870.

Multi-Server Option. Multi-server CRM should be considered.

Test Servers

It is recommended to have one or more Test Servers to replicate the above. One server is sufficient for this unless bench marking is being run, in which case, you should replicate the server specification and configuration as closely as possible.

Future phases of projects and change requests also need a test environment after the initial "Go Live" is achieved.

For every third-party server involved in the deployment of CRM, there should also be an equivalent testing server. For example Exchange server, Accounting server.

Chapter 3: Security Overview

In this chapter you will learn how to:

- Apply user authentication and passwords.
- Apply security profiles and territories.
- Apply field security.
- Apply company team restrictions.
- Apply principles of a secure installation.

User Authentication / Password Setup

A user requires a User Name logon ID to access the system. You can also set the minimum length and strength of passwords. These settings can be accessed from **<My Profile> | Administration | Users | Security | Policies**.

Password Encryption

A user's password is encrypted both within the system and in the database for maximum security. The System Administrator can change, but not view, a user's existing password.

Password Expiry

The number of days for the password to expire is set within **<My Profile> | Administration | Users | User Configuration**. When the password is changed, the expiry date is adjusted accordingly. The Password Never Expires field in the User Details page must be set to False for this setting to take effect.

Security Profiles and Territories

The System Administrator can manage security access rights across the organization by setting up security Profiles and, if required, security Territories.

Profile. A profile is a way of grouping users together when defining access rights (View, Update, Insert, Delete).

Territory. In addition to basic access rights profiles, you can further divide users rights by territory. For example, you may want users in the Europe territory to view all Opportunities within the USA territory, but not to be able to update them.

Complex inter-territory security rights and exception handling are also catered for using Advanced Policies.


Profiles and Territories are set up from **<My Profile> | Administration | Security**, and assigned to users within **<My Profile> | Administration | Users**.

Please see the Security Management chapter in the System Administrator Guide for more information.

Field Security

The System Administrator can set up field security for the whole CRM system, for individuals, teams, and for security profiles via the **<My Profile> | Administration | Customization | <Entity> | Fields** tab.

For example, it is possible to make a field invisible to some users, allow others to view the contents of the field but not to change them, and to give others both read and write rights. In addition, it is also possible to make it mandatory for the user to enter a value in the field before submitting the form. For more information on Field Security please refer to the Using Field Security chapter in the System Administrator Guide .

Field Security							
Security Type	Modification Date	Read Access		Write Access		Required	Remove
		Allow	Deny	Allow	Deny		
Everyone	 25/03/2008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Access rights set for Everyone, an individual user, and a security profile

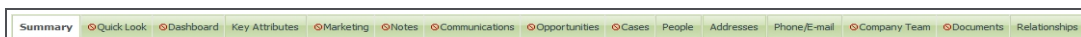
Company Team Restrictions

Restrict Sensitive Info

Rights to view the following tabs can be restricted for individual users depending on company team membership. This means that if you have not been assigned to work on an account via the Company Team tab, you may not view or update information in the following tabs:

- Quick Look
- Dashboard
- Marketing (if available)
- Notes
- Communications
- Opportunities
- Cases
- Company Team
- Documents

The tabs are displayed with "no entry" signs.



Company tabs

If a user selects one of the restricted tabs, a dialog box is displayed to inform the user that they must be on the team to view the information.

These access rights can be set up in the User Details page.

If a user searches for a related entity, such as an Opportunity, and they are not on the Company Team of the associated company, when they click on the hyperlink of the entity in the list, the following message is displayed: "You do not have security rights to view this entity".

Restrict Updates

The Delete and Edit buttons are available on the Company summary page only if the user is on the Company team.

In addition, rights to update the following tabs can be restricted for individual users depending on company team membership. This means that if you have not been assigned to work on an account via the Company Team tab, you may view, but not update any of the following information related to that account:

- Quick Look
- Notes
- Communications
- Leads
- Opportunities
- Cases
- Documents

Principles of a Secure Installation

Backing up database information is just one element, albeit a critical one, in an overall approach to maintaining a secure and stable CRM installation. By adhering to best practices, administrators can minimize the risks of service interruption and data corruption that can arise from sophisticated deployments.

Server Security

There are many ways to secure the system from unauthorized access:

- 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.
- Use a Firewall to restrict unauthorized access from outside of your network and allow only authorized users through.
- Configure the Windows Firewall.
- 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 defences offered by a configured DC are further enhanced by placing it behind a robust firewall.

- Configure security policies on Windows Server.
- Disable or delete unnecessary accounts, ports and services on the server.
- Uninstall unnecessary applications.
- Configure auditing on the server.
- Disable unnecessary share drives.
- Configure encryption on Windows Server.
- Install anti-virus software.
- Install the latest Windows and Sage CRM patches and hotfixes.
- Use the IIS Lockdown and URLScan tools to harden IIS.

You can choose the combination of the above methods that best suit your needs to secure connections to the system.

Database Security

Users do not have direct access to the SQL database. The eWare DLL accesses the database by 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 the eWare DLL can be configured 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. Administrators should 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.

If you need to change the logon password:

1. Log onto CRM with System Administrator rights.
2. Select **<My Profile> | Administration | System | Database**. You will now be able to see the logon that the user uses to access the SQL database.
3. Click on the **Change** button and type in the new password.
4. Select the **Save** button.

To start SQL Server Enterprise Manager:

1. Go to the appropriate Server registration (that is, the name of your Server) and expand the tree. Select the Security folder and then Logins.
2. Right-click on the login you want to change and click on Properties to change the password.

3. You will now have to go to the Management folder and right click on SQL Server Agent. Click Properties and select the Connection tab. Input the new password here.
4. You must now stop and start IIS (Internet Information Services) so as to reinitialize it due to the password change. At the DOS command prompt, type the following:

```
net stop iisadmin /y
net start w3svc
net start msftpsvc
```

SSL (Secure Sockets Layer)

Without using a Firewall, IIS can use different methods to secure transmitted and received data. One of the methods of securing data is by using a SSL server certificate. This ensures that data that has been transmitted and received between the server and the user is encrypted. There are two versions of SSL encryption 40bit and 128bit. At the moment it is possible to crack the 40bit encryption with the right amount of computing power but at today's computing standards it is not possible to crack 128bit. SSL cannot protect your server from unauthorized access; it can only encrypt sessions between the server and a user.

An SSL certificate can be imported into IIS to create a secure connection between CRM and its users. When a client logs onto CRM, the SSL certificate is downloaded and the data sent to and from the client is encrypted. Using this method, anybody can log on and download the SSL certificate. To be more secure, IIS can be configured to only allow clients with a SSL certificate installed on their machine and deny anybody without the appropriate certificate. Also, IIS can use Windows NT Challenge/Response, which basically requests a user to login using a valid user name and password for that domain, before giving them access to any data.

Firewalls

If you plan to let users access the system remotely, the best way that you can protect your network from the Internet is to install a Firewall. This will ensure that only authorized traffic accesses your CRM database, and protects your server from unauthorized users. By using a Firewall you can configure rules to only allow certain traffic through and to only allow traffic originating from a specific source. By doing this you can ensure that your server is protected from Internet attacks. You can also install a Firewall in all of your remote sites and set up Virtual Private Networks (VPNs) to increase the security of data being sent. Also, mobile users can be set up as mobile firewall users so they can access the VPN and transmit and receive data securely.

Application Security

When a user wants to gain access to the system he or she must be assigned a valid user name and password within CRM by the System Administrator. Within the system each user can be assigned different levels of access security depending on their job role (for example, IT, Accounts). To increase security all users should be advised to use an alphanumeric password of no less than 6 characters. The more secure HTTPS protocol protects 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.

Up-to-date software

Regular installation of software such as Windows Updates and the slipstreaming of software patches minimize software security vulnerability. Recognized anti-virus software is also a necessary tool for any network system.

Performing backups

Scheduled and manual backups form a critical part of securing your Sage CRM installation. As well as backing up the database, a regular procedure for backing up the Registry and Program Files should also be put in place and repeated, in particular prior to major customization work or upgrades.

Chapter 4: Installation

In this chapter you will learn how to:

- Prepare to install the software.
- Run the setup program.
- Use the License Key Update application.
- Install Changes for Version 7.3.
- Uninstall CRM.

Prerequisites

To install CRM you need:

- The software described in [System Overview \(page 2-1\)](#). CRM connects to the database using Microsoft Data Access Components (MDAC). If your system does not support MDAC, or the latest version, it is installed as part of setup.
- The latest version of the Java Runtime Environment (JRE) installed on the server side. **Note:** Sage CRM 7.3 installs its own instance of JRE. By default, if you do not specify an installation folder for the Sage CRM install, the new JRE folder will be here: ...\\Program Files (x86)\\Sage\\CRM\\Services\\JRE7
- If you are installing a trial version of CRM, you must have IIS 7.5 or greater installed. An evaluation version of SQL Server is installed during the setup if it does not already exist.
- A valid license key. The license key takes into account your company name. Care must be taken during the installation to enter this information exactly as instructed by the vendor.
- The CRM CD or Install Download. The install includes a setup utility that you can use to install CRM, documentation in PDF format, and a Microsoft SQL Server evaluation install.
- If you're installing Sage CRM on a separate machine to the database server, you need the Microsoft SQL Server client tools on the application server.
 - Insert the MS SQL Server CD and double-click **setup.exe** to start the SQL Server Installation Center.
 - Click **Installation** from the left pane.
 - Click **New SQL server stand-alone installation or add features to an existing installation** from the right pane.
 - Set up support files.
 - Enter the product key.
 - Agree to license terms.
 - Click **Client Tools Connectivity and Management Tools - Basic**.
 - Click **Next** and follow the onscreen instructions to complete the wizard.



During installation, CRM will access and update your registry and install software.

Running the setup program

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" user gets locked out of Sage CRM. The process for installing CRM for the first time is different to the process for installing CRM when a CRM installation already exists on the server.

Installing Sage CRM for the first time

1. Run the **Setup.exe** file supplied in the Sage CRM installation package from the CD or the location where you copied and saved the install and select an install option. At the first Sage CRM Install Shield Wizard page, click **Next**.
2. Review and accept the Software License Agreement and click **Next**.
3. Enter your name, your company name, and your license key as provided by the vendor and click **Next**.
4. Select **Existing Microsoft SQL Server** or **Install Microsoft SQL Server Express** and click **Next**.
 - If you select **Existing Microsoft SQL Server**, the Installation Name dialog box is displayed. 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. For more information on installing Microsoft SQL Server Express on Windows Server, see [Sage CRM installations on Windows Servers \(page 2-5\)](#). **Note:** The sa password for the SQL Server Express install is *SageCRM73*, and the instance name is *crmsqlexpress*. The SQL Server Express port is chosen automatically.
5. Enter the installation name. It's recommended that you use the default installation name **CRM**. If you enter an alternative name, ensure there are no spaces in the name. Click **Next**.
6. Set the default location for the CRM program files. IIS looks in this location for the CRM home page. Click **Next**.



Including extended characters in the installation path or folder is not supported. To include such 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.

7. Confirm your server name and your SQL Server user ID, and enter the password for this user ID. The Window Authentication option is not available during an install or upgrade.
8. Enter the initial size of the Sage CRM database. For example: 1024 (for 1GB), 2048 (for 2GB), 4120 (for 5GB), 10240 (for 10GB). The default size is 512MB (0.5GB). You must enter an integer (no decimals), and the minimum you can enter is 50. This field has no upper limit

validation, but the entry should accurately reflect your database and disk space limitations. Click **Next**.

9. Decide whether to include demonstration data in your installation, and click **Next**. If you include demonstration data, you 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, but no other sample data.
10. Choose a **default currency**.
 - 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.
 - The default currency is displayed in a read-only format against all currency type fields in CRM. If your implementation deals with multiple currencies, this forms the Base Currency against which all other currencies are calculated. Click **Next**.
11. On the **HTTP Protocol and Proxy settings** step, you can select the following options:
 - **Use HTTPS**. Enables HTTPS protocol for Sage CRM connections. If you select this option, 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 instructions on how to configure SSL, see the article [How to Set Up SSL on IIS 7](#) posted on www.iis.net. This article applies to Web Server (IIS) version 7 and later. After you enable HTTPS, make sure to update the *HTTPPort* and *OutlookPort* entries in the *Custom_Sysparams* table in Sage CRM. In these entries, you need to specify the same port you configured in the SSL binding settings for the **CRM** site.
 - **Use proxy**. Enables the use of a proxy server for Internet access. If you select this option, specify the proxy server address and port you want to use and enter proxy authentication details if required.
12. Review the current settings, and click **Next**. When the installation is finished, complete all fields on the Registration page and click **Next**. The registration details are sent to the Sage CRM registration server as a background process. If this isn't successful, you can complete the registration manually from Sage CRM in **<My Profile> | Administration | System | License Key Details**.
13. Click **Finish** to complete the installation process. The Readme file and the Logon page are displayed.

Installing CRM when a version is already installed

Run **SETUP.EXE** from the CD or the location where you copied and saved the install and select an install option.

- **New Install** creates a new CRM installation on the server. If you select this option, follow the steps in [Installing Sage CRM for the first time \(page 4-2\)](#)
- **Upgrade Previous Version of CRM** upgrades from version 7.2. To upgrade from 7.1, you must first upgrade to 7.2 using the 7.2 install. Versions older than 7.1 are not supported. As with all upgrades, it is recommended that you make a full backup of your data prior to upgrading. For more information about upgrading from a previous version of CRM, see [Running the Upgrade Install shield \(page 9-2\)](#).

- **Change Existing Install of CRM** changes specific components in CRM without performing a full upgrade. You can reinstall the database, registry, program files, IIS aliases, and license key. The ability to change the license key means you can easily "add on" CRM features that weren't purchased as part of the original license, or you can increase the number of licensed users.



You can also use the License Key Update application as an alternative way to update your install if the only change you need to make is to the license key. For more information, see [Using the License Key Update application \(page 4-4\)](#).

If you select this option, follow the steps below:

- If there's one existing CRM installation, the Reinstall Options dialog box opens. If there's more than one CRM installation, select the one you want to upgrade. When you do this, the Reinstall Options dialog box opens.
- Select the components you want to reinstall and click **Next**. You are prompted to backup components that are affected. It is recommended that you perform the backups before you proceed. If you select **License Key**, you're prompted to enter the new license key and the New CRM Features dialog box is displayed. Any differences between your previous license and the new license are listed.
- If there any configurable options, you're prompted to change them. For example, if you've chosen to update the CTI component, you're prompted to enter information about your current location. Click **Next** and the install proceeds automatically.
- **Complete Reinstall** reinstalls an existing CRM installation. The existing installation is completely overwritten. If you select this option, follow the steps below:
 - If there's one existing CRM installation, the Select Setup Type dialog box opens. If there's more than one CRM installation, select the one you want to reinstall. When you do this, the Select Setup Type dialog box opens.
 - To complete the installation, follow the steps in [Installing Sage CRM for the first time \(page 4-2\)](#).

Using the License Key Update application

If the only change you want to make is to the license key, you can use the License Key Update application.

1. Navigate to your install location, and click **License Update** folder:
 `..\Program Files(x86)\Sage\CRM\[install name]\License Update`
2. Launch **LICENSEKEYUPDATE.EXE**.
3. Enter the new license key.
4. Click **Next** and complete the wizard steps.

The License Key Update application is also available with the CRM install files in:

`..\Sage\CRM\Utils\EN\License Update`

Install Changes for Version 7.3

There are a number of changes to the installation in version 7.3 to be aware of. Please note that modification of CRM's Tomcat installation is not supported. In particular, installation of 3rd party or bespoke applications into Tomcat or modifications of Tomcat configuration files, unless specifically requested by Sage Level 3 Support or a Sage Operating Company.

Registration Process

There is a new step at the end of the CRM installation process to register your CRM system. 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**. A blue banner is displayed in Sage CRM until the product is registered.

A blue banner with the following message is displayed if the same license key is registered more than three times:

"Licence count has exceeded its installation limit. Please contact your Business Partner"

Java Runtime Environment (JRE)

During the installation process, the Sage CRM software will add its own instance of JRE.

This new folder will be in the CRM services directory. If you did not specify a folder for the Sage CRM install, then it will be in:

```
...Program Files(x86)\Sage\CRM\Services\JRE7
```

The benefit is that the Sage CRM JRE instance will not be affected by updates made to the server's default JRE. This removes the risk of compatibility loss, and the disruption of features such as the Dashboard or Export functionality.

Apache Tomcat

A Tomcat service is installed with each instance of version 7.3. The Tomcat files for each install are in:

```
..Program Files(x86)\Sage\CRM\[installname]\tomcat
```

Each Tomcat server requires its own port. The IIS-Tomcat proxy anchors on the following port info matching in:

- ..\Program Files(x86)\Sage\CRM\[installname]\tomcat\conf\server.xml
- <Connector port="16009" protocol="HTTP/1.1" redirectPort="8443" />

Tomcat works with either 32 bit or 64 bit servers.

Note: If you use a 64-bit server, the initial memory used to load memory on start up will almost double. This is because, within a 64 bit environment, all the metadata strings in memory will be twice the size. But the amount of memory used to actually run the application, execute threads etc. should not change.

Apache Tomcat Redirector

Sage CRM 7.3 uses Apache Tomcat v7. An Apache Tomcat redirector is installed to accommodate the Interactive Dashboard and SData features. Common files for the redirector are installed in:

```
..\Program Files(x86)\Sage\CRM\Services\IISUtils
```

All rules are contained in the CRM.REWRITER.RULES file located in:

```
..\Program Files(x86)\Sage\CRM\Services\IISUtils\CRMRewriter
```

The basic function of the redirector is to remove the SData part of any incoming URL.

The Redirector in Sage CRM 7.3 uses the Application Request Routing (ARR) extension module to handle SData requests and HTTP Rewrites. ARR is configured in the IIS Manager once Sage CRM 7.3 is installed.

ARR is a proxy-based routing module that relies on the URL Rewrite module to inspect incoming HTTP requests, and then make routing decisions. Therefore, the URL Rewrite module is required to enable ARR features. The URL Rewrite module can be found in the IIS Manager.

Checking Tomcat Settings

To check that Tomcat is working properly, you can enter the following URL into your browser:

```
http://[servername]:[Tomcat Port number]/[installname]j/sagecrm/-/$schema
```

You can find the Tomcat port number in the server.xml file located in:

```
..\Program Files\Sage\CRM\[installname]\tomcat\conf
```

To check that the IIS rewrite rules are working, enter the following URL into your browser:

```
http://[servername]/sdata/[installname]j/sagecrm/-/$schema
```

Checking that the Rewriter is available

The following test will help you determine if the SData application under IIS is working:

In a web browser, type in:

```
http://[servername]/sdata/[installname]j
```

e.g. <http://stl00458/sdata/crm73j/>

The message "Connection Successful" is displayed on the screen.

Checking if the Rewriter is redirecting

Go to:

```
http://[servername]/sdata/[installname]j/sagecrm/-/$schema
```

e.g. [http://stl00458/sdata/crm73j/sagecrm/-/\\$schema](http://stl00458/sdata/crm73j/sagecrm/-/$schema)

If this returns an XML page, then the Rewriter is properly redirecting HTTP requests.

New Folders in WWWRoot

The following folders have been added to the WWWRoot folder:

- ..\Program Files(x86)\Sage\CRM\[installname]\WWWRoot\js\

The Js folder contains JavaScript files from CRM or from custom folders. Javascript files are now handled and deployed by the server to the client. Please refer to the Advanced Screen Customization chapter in the *System Administrator Guide* for more information on how to take advantage of this for client-side scripting.

- ..\Program Files(x86)\Sage\CRM\[installname]\WWWRoot\FusionCharts\

This folder provides a new Fusion Widgets library. Fusion Widgets allow developers to create custom charts and elements for data visualization. Detailed documentation on FusionCharts Widgets is available at <http://docs.fusioncharts.com/widgets>.

Note: It is important not to change any configuration files or folders unless instructed to do so.

Solo End of Life and use of SQL Identities

Solo was the Sage CRM disconnected solution for distributed remote clients. This is not supported in 7.3. If you are currently working with Solo and considering upgrading to 7.3, please refer to [Upgrading from a version using Solo \(page 7-2\)](#) for more information.

One of the advantages for all new SQL Server installations of removing Solo, is a change in the way in which unique identifiers for records in Sage CRM are generated. New installs of Sage CRM 7.3 on SQL Server use SQL Identities. This should create significant performance improvements.

For systems that are upgraded from Sage CRM 7.1 to Sage CRM 7.3, the stored procedure, **eware_get_identity_id**, is modified and will continue to be used to maintain primary key integrity.

If you carried out advanced customization on earlier versions of Sage CRM, you may have worked with tables such as **rep_ranges**, **rep_deletes** and **rep_conflicts**. These tables, along with **soloprofileoptions** and **clientrangesrequired** and their associated views, are no longer used.

Uninstalling CRM

You can remove CRM using the CRM Uninstall Shield, or you can remove it manually.

Running the Uninstall Shield

To Uninstall CRM using the Uninstall Shield in Windows:

1. Select **Start | Control Panel**, and select **Uninstall a Program**.
2. Click on **Sage CRM** and click the **Uninstall** button.
3. When the CRM Uninstall dialog box is displayed, select **Next**. The Database Login Details dialog box is displayed.
 - If you have more than one CRM installation, select the installation you want to remove from the Uninstall list and select **Next**. Note that this dialog box is not displayed if you have a single CRM installation.
 - If the installation is a Self Service or Multi-server CRM install, a dialog box is displayed to ask you if you are sure you want to remove the database (in the case of Multi-server CRM) or the Self Service installation and Web site (in the case of Self Service). Select **Yes** to continue.

4. Confirm your server name and your SQL Server user ID, and enter the password for this user ID. Select **Next** to continue.
5. Select **Yes** to confirm that you want to uninstall all of the CRM components listed. When the uninstall is complete, a dialog box is displayed.
6. Select the **View Uninstall Log File** check box if you want 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 Manually

Note that the steps listed below are based on an installation of CRM that uses the default installation name, CRM. If you used a different installation name, use it in place of CRM. You will also need to specify your drive name.

To uninstall CRM Manually:

1. Remove all CRM services (Escalation, Integration, E-mail Manager, Indexer). This can be done from a command prompt, for example:

```
..\Program Files(x86)\Sage\CRM\Services>crmindexerservice.exe /U
```

The Apache Tomcat service can be removed from a command prompt:

```
..\Program Files(x86)\Sage\CRM\[install name]\tomcat\bin>service.bat remove [install name]Tomcat7
```
2. Unregister the DLL:
 - Select **Start | Run** and type: **regsvr32 "..\Program Files(x86)\Sage\CRM\CRM\WWWRoot\ware.dll" /u**
 - **Note:** Enclosing the path in quotation marks allows for the space between Program and Files.
 - When the RegSvr32 dialog box is displayed, click **Yes** to confirm that you want the eWare.dll unregistered.
3. Select **Start | Control Panel | Administrative Tools | Internet Information Services** and remove the CRM entry located on the Default Web Site tree on the left-hand pane. **Note:** In Windows 7, you must select **Start | Control Panel | All Control Panel Items | Administrative Tools | Internet Information Services (IIS) Manager**.
4. Open **Start | Programs | Microsoft SQL Server | Enterprise Manager** and, on the left-hand pane, expand the **Databases** tree to locate the CRM database. Then, right-click on the CRM database and select **Delete** to remove it.
5. Remove the registry entries:
 - Select **Start | Run**, type **Regedit**, and select the **OK** button.
 - If you only have one CRM installation on your machine, expand HKEY_LOCAL_MACHINE/SOFTWARE/ and delete the eWare folder by right-clicking and selecting **Delete**.
 - If you have multiple CRM installations, expand HKEY_LOCAL_MACHINE/SOFTWARE/eWare/Config and delete the appropriate key from this

location. Expand HKEY_LOCAL_MACHINE/SOFTWARE/eWare/Mapping and delete the appropriate key from this location.

6. Delete the CRM installation directory:
 - Stop the Web service by selecting **Start | Run** and typing **net stop iisadmin /y**. **Note:** you can access the Run command in Windows 7 by pressing the Windows logo key + R.
 - Click the **OK** button.
 - Once the service has stopped, from Windows Explorer, go to ... \Program Files\Sage\CRM\CRM and delete the CRM folder, that is, the folder containing the CRM installation files.
 - From Windows Explorer delete the eware.cpl file, which is located on C:\winnt\system32 if WINNT is your system directory.
7. Reboot your computer. When you do this, all Sage CRM components are removed from memory.

Chapter 5: Server Administration

In this chapter you will learn how to:

- Schedule a backup of the CRM database.
- Restore a backup of the CRM database.
- Set up a database maintenance plan.
- Understand when to perform manual backups.
- Back up the database.
- Back up the registry.
- Back up program files.

Scheduling Backup of the CRM Database

This section takes you through a sample backup procedure for the CRM database using SQL Server. For the latest backup procedures for SQL Server, or if you are using another database, we recommend you refer to the manufacturer's Web site and documentation.

1. Either through direct access to the Server machine, or via any local machine with SQL installed, open SQL Enterprise Manager and connect to the **server machine**. A list of all the databases stored on the server is displayed.
2. Select the **CRM** database by clicking on its name. A summary screen is displayed.
3. One of the options is **Backup Database**. Select this to create a backup job. Alternatively, you can select the Tools menu and choose the Backup Database option. A dialog box is displayed allowing you to specify the type and destination for the backup. Unless you have any valid reason to change these settings, you should use a complete database backup to Disk.
4. In the destination area, choose **Disk** and then click the **Add** button. This will bring up an additional dialog box asking for the destination directory to store the backup files. This defaults to the backup directory within your SQL installation (for example, C:\MSSQL\BACKUP), although you may wish to specify an alternative directory.
5. Once you have correctly specified both the type and destination of the backup job, you can click on the **Schedule** option at the end of the SQL Server Backup window.

The Schedule Task dialog box allows you to specify a schedule by which this backup task will run. Ideally, having it run every night should be sufficient.

Once the schedule and the backup job have been specified and saved, your database will be backed up to files every night. However, you should include these files on any server backup procedures you may have, like storage to a tape drive or remote disk.

Restoration of a Backup of the CRM Database

To restore a CRM database that has been backed up using the method previously discussed, you follow more or less the same procedure.

1. Open SQL Enterprise Manager and connect to the SQL **Server** on which your CRM database is stored.
2. Click on the database you wish to restore and then choose **Restore Database** in the same summary screen you chose Backup from. However, if the database does not exist in the first place, you need to select the Tools menu and choose Restore Database. The Restore Database dialog box which appears will default to restore from a database. You should change the setting to **Restore from Device**.
3. Then, using the **Select Devices** button, you specify the directory that you specified during the backup procedure. The database will then be restored from files onto your SQL Server.

Setting up a Database Maintenance Plan

It is strongly recommended that you set up a database maintenance plan as part of your CRM Server Administration. This section takes you through a sample plan for a SQL Server install. For detailed information on setting up the tasks and plan for SQL Server, please refer to the manufacturer's web site.

To set up a new database maintenance plan for SQL Server:

1. Open Microsoft SQL Server Management Studio.
2. Expand the **Management** folder in the Object Explorer.
3. Right click Maintenance Plans, and select **Maintenance Plan Wizard**.
4. Follow the steps in the Wizard until all the tasks have been defined.

The table below provides you with an example of tasks to implement as part of your database maintenance plan.

Task	Hourly	Nightly	Weekly	Monthly
Database consistency check			✓	
Shrink database				✓.
Reorganize indexes		✓		
Rebuild indexes			✓	
Update statistics		✓		
Database backup – Full			✓	
Database backup – Differential		✓..		
Database backup – Transaction	✓			

Task	Hourly	Nightly	Weekly	Monthly
log				
Maintenance clean-up			✓	

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

** Except the night that the full database backup is run.

Why Perform Manual Backups?

Performing a manual backup is recommended before any customization work is implemented in a live environment.

When performing an upgrade, you are offered the option to have the system make an automatic backup of the database and registry. However, it is recommended that you also perform manual backups of the database, registry, and program files before beginning any work on an upgrade.

A manual backup is important because it allows you to:

- Preserve a complete set of system, database, and registry files that can be stored completely independently of the upgrade environment, thus providing added security against data loss during the upgrade procedure.
- Restore the customer's environment in-house, allowing you to create a mirror image of the customer's existing 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

To back up the CRM database manually:

1. Decide on a location in which to save your backup files and ensure that you have sufficient space to do so.
2. Open the Database Administration tool, for example, SQL 2008 R2 Management Studio, and back up the database from there.
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.

Note: If you experience any difficulties when backing up the database, you should contact the IT Administrator at the customer site.

Backing up the Registry

To back up the registry manually:

1. Decide on a location in which to save your backup files and ensure that you have sufficient space to do so.
2. From the desktop on the Web Server, open Start | Run, and type **Regedit** in the Run dialog box.
3. Click **OK**. The Registry Editor is opened.
4. Navigate to **HKEY_LOCAL_MACHINE\SOFTWARE\Ware\Config\<Install Name>**
5. Select **File | Export**. The Export Registry File dialog box is displayed.
6. Type a file name in the **File Name** field and browse to your backup location.
7. Select the **Save** button.
8. In the Registry Editor, navigate to **HKEY_LOCAL_MACHINE\SOFTWARE\Ware\Mappings**.
9. Select the file that corresponds to the install you are upgrading.
10. Select **File | Export**. The Export Registry File dialog box is displayed.
11. Type a file name in the **File Name** field and browse to your backup location.
12. Select the **Save** button.

Backing Up Program Files

To back up Sage CRM program files manually:

1. Decide on a location in which to save your backup files and ensure that you have sufficient space to do so.
2. Browse to the Sage CRM install files. By default, the files are installed to `..\Program Files (x86)\Sage\CRM\[install name]`.
3. Create a zip file containing the install name folder and all sub-folders.
4. Save the zip file to your backup location.

Chapter 6: Multi-server CRM

In this chapter you will learn how to:

- Install multi-server CRM.
- Change multi-server CRM configuration settings.
- Understand how multi-server CRM performs load balancing.

Installing Multi-server CRM

Sage CRM can be implemented in a fully distributed environment, where a single database is accessible through multiple servers. The main benefit of the Multi-server CRM solution is enhanced performance due to efficient load balancing. The load balancing can be performed by CRM or by a dedicated load balancing application.

Prerequisites

To install Multi-server CRM you need:

- To decide on which servers in the cluster you want to install the CRM application on. You also need to decide what database server the database is to be created on. In a typical multi-server CRM environment, CRM install files will be created on the Web/Application servers and the database will reside on a separate, dedicated database server.
- To decide on which servers in the cluster you want CRM Services such as the Indexer, Escalation, and E-mail Manager to run. They only have to be installed once. The services are usually run on the first ("primary") web server, but in a multi-server CRM environment they can split across other application servers in your cluster, for example:
 - Application server 1 (primary web server) - Email manager
 - Application server 2 - Indexer service
 - Application server 3 - Escalation service
- A valid license that includes Multi-server CRM. Your license key can be used on all of the servers in the cluster you are about to set up.

Installation

To install Multi-server CRM, first install CRM on the first or primary web server. This first install should also install the CRM database to the database server. Subsequently you can install CRM on the other web servers in the cluster. The database will not be installed for those installations as the CRM database only needs to be installed once during the multi-server CRM installation.

To accommodate the Interactive Dashboard and SData features, a Tomcat service is installed on the web server. In a multi-server CRM environment, the Tomcat service is installed on each web server in the cluster. The Tomcat files are in: ..Program Files(x86)\Sage\CRM\[installname]\tomcat

If changes are made to custom tables on the database, the Tomcat service on each web server will reload its metadata (so will the EWARE.DLL on each web server).

Note: You need to make sure that 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.

To install CRM on the server on which the database will reside:

1. Follow the instructions on the setup screen as you would for a typical CRM installation.
2. Take a note of the installation name you specify in the **Installation name** dialog box. This name is required when you are installing the other servers in the Multi-server CRM environment.
3. The database will be automatically installed on the server as it would be in a normal CRM installation.

In multi-server environments, only one single Replication Engine instance should be installed on the first server in a group.

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. Remove the Replication Engine from the new node.
 - Stop <installname>Tomcat7 Windows service.
 - 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.
 - Start <installname>Tomcat7 Windows service.
4. Enable integration on the first node.

To install the other CRM servers:

1. Follow the instructions on the setup screen as you would for a typical CRM installation. You will not have to register these other CRM servers
2. Ensure that the name you enter in the **Installation name** dialog box is the installation name you specified during the original CRM installation. You took a note of this name in Step 2 above.
3. Check the location in the Choose Destination dialog box, and select **Next**.
4. Next change the name in the **Database Server** field to the server on which the CRM database was installed previously.
5. When the next dialog box is displayed, select **No** so that the database is not installed on this server.
6. Install all of the other servers in the same way.

Note: For the Document Library feature to work correctly in multi-server environments, a shared UNC network path with the appropriate access rights to the Library folder is required. This is defined in **<My Profile> | Administration | E-mail and Documents | Documents & Reports Configuration | Physical Root Directory For Mail Merged Documents and Default Document Templates Location For Mail Merge.**

Multi-server CRM Configuration Settings

Database configuration settings are set up automatically when you install Multi-server CRM.

To view Multi-server CRM configuration settings for the server on which the database is installed:

1. Open **<My Profile> | Administration | System | Database.**
2. Select the **Change** button. The Database settings page is displayed in edit mode. There are three new fields on the page for Multi-server CRM—CRM Server Names, Do Load Balancing, and DTLS Server Name.

The following table describes the Multi-server CRM fields on the Database settings page.

Field	Description
CRM Server Names	The names of all the CRM Servers in the cluster separated by semi colons.
Do Load Balancing	Set to True to ensure that load balancing is performed by CRM. If you want to use a specialized application to perform the load balancing, set the option to False.
DTLS Server Name	Delayed Table Level Script server name. That is, the name of the server that you want all Table Level Scripts performed on. Note: If this server is an HTTPS server, then the server name needs to be the same as the one specified on the server's SSL certificate.
Fully qualified CRM Web Server Names	The complete domain name for CRM Web Servers, consisting of the hostname and the domain name. For example, a fully qualified domain name for a mail server might be mymail.sage.com. In this example, the hostname is "mymail", and the host is located within the domain "sage.com". Note: If any of these servers require HTTPS, then the server name needs to be the same as the one specified on the server's SSL certificate.

When all the servers are set up, you will notice that the entry in the Default database field is the same on each of the CRM servers in the Multi-server CRM environment. This is the name of the original CRM installation—the database to which all the servers will connect.

Making Changes on a CRM Server

Once Multi-server CRM is set up, any changes you make on any CRM server are reflected on all of the other CRM servers in the cluster. Metadata is refreshed on all the servers if any customization is carried out.

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

Load Balancing

When a user attempts to log onto CRM in a Multi-server CRM environment that is configured for load balancing:

1. The List of all available servers is obtained from the custom_sysparams table.
2. The number of users logged onto each server is calculated, and the name of the server with the lowest number of logged on users is obtained.
3. The CRM Logon page is submitted to the server with the lowest number of logged on users.
4. Once the user has been logged on, the name of the server that the user has been logged onto can be seen in the URL.

Load Balancing Example

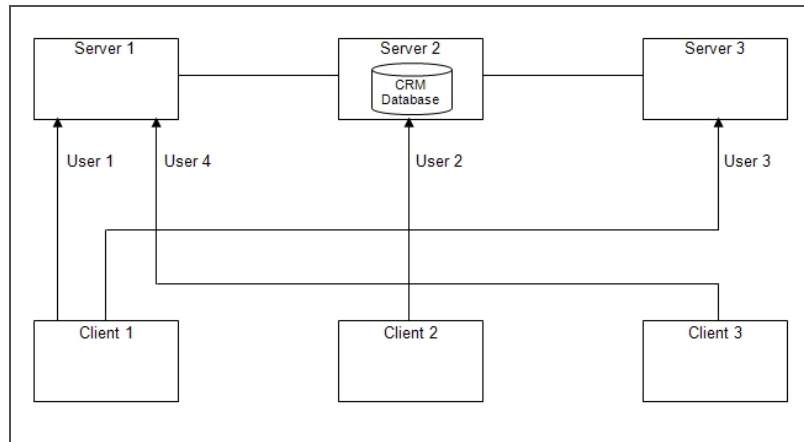
This example illustrates what happens when four users attempt to log onto CRM in a Multi-server CRM environment.

Note the following regarding the CRM system depicted below:

- Load balancing has been configured.
- There is a cluster of three servers, Server 1, Server 2 and Server 3.
- The CRM database resides on Server 2.
- Each server can access the CRM Database.
- 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, see the diagram below for an illustration:

1. User 1 and User 4 are logged onto the CRM Database by Server 1.
2. User 2 is logged onto the CRM Database by Server 2.
3. User 3 is logged onto the CRM Database by Server 3.



Load Balancing in a Multi-server CRM system

Chapter 7: Introduction to Upgrading

In this chapter you will learn how to:

- [Prepare for upgrading.](#)
- [Prepare for an Upgrade from a Solo system.](#)
- [Follow a structured approach for upgrading.](#)

Preparing for an Upgrade

This guide can be used when performing an upgrade from Sage CRM version 7.2 to version 7.3.

If you are upgrading from CRM 7.1 to 7.3 it is recommended to upgrade to 7.2 and log on to the CRM system before upgrading to 7.3.

Before beginning an upgrade, you should note the following:

- When upgrading to version 7.3, users require a 7.3 license key for the new version.
- This guide can be used with all types of upgrades, including Sage CRM with non-standard functionality, such as the Extensibility Module. If you are upgrading from a Sage CRM system using Solo, which is no longer supported, please read [Upgrading from a version using Solo \(page 7-2\)](#) first.
- This guide can be used when upgrading CRM with all database types. For information on backing up and restoring specific database types, please consult the IT Administrator at the customer site, or the relevant database documentation.
- Depending on factors such as the size of an existing installation, the number of existing customizations, and the number of users, a Sage Business Partner may sometimes be directly involved with some aspect of an upgrade at a customer site. Such consultancy is billable and may include tasks such as running a trial upgrade, running a live upgrade, post-upgrade testing, and Administrator or User training on the upgraded software.
- Indexes or statistics are not removed from databases during upgrade. If a database column has a statistic or index on it, it may cause an error in Sage CRM during the upgrade process. It is important that any of these errors are recorded and rectified to ensure Sage CRM is upgraded completely and successfully. Automatically created indexes or statistics names would begin with "_dta_index_" or "_dta_stat_", respectively, and any that are causing problems can be safely deleted in order to upgrade successfully. If you delete any problematic indexes or statistics, it is recommended that you run a database optimization process (for example, the MSSQL Database Tuning Advisor) after the install.
- Version 7.1 SP1/SP2 shipped with demo interactive dashboards and demo gadgets. These demo gadgets rely on specific data sources being present in the CRM install in order to display. If these data sources have been removed or have been heavily customized prior to the upgrade then these gadgets may not display correctly when viewed in 7.3 after upgrading. In addition, users must be given access to Enterprise Reports (in <My Profile> | Administration | Users) to be able to view data on gadgets based on Report data sources.

- After the Upgrade, 7.3 CRM users and administrators have access to Welcome Dashboards. These are displayed by default if the user did not have a default dashboard set up in 7.2. If a User has a default dashboard set, then that is the first dashboard they see after upgrading, however, the Welcome Dashboard can be selected from the dashboard drop-down list.

Upgrading from a version using Solo

Solo is not supported on Sage CRM 7.3.

If you wish to continue working with Solo, then you can do so as long as your current version of CRM is still supported (7.0 or 7.1).

The recommended solution for mobile users from 7.2 onwards is to access Sage CRM while connected to the internet via Sage CRM Mobile Web. For users who want offline access to Sage CRM, mobile apps from Sage CRM and/or Sage CRM business partners offering offline solutions present alternatives to Solo.

Please refer to the *Sage CRM Mobile Guide* for more information on Sage CRM Mobile Web.

If you have been using Solo and are upgrading from 7.1 SP1/SP2 to 7.3, please make sure that all the recommendations for running an upgrade are carried out and that all remote client users have synchronized with the Sage CRM server prior to upgrade. Running a test upgrade is essential.

Recommended Steps in the Upgrade Process

A poorly implemented upgrade can cause downtime at a customer site. However, if an upgrade is well planned and executed, problems can be identified early and solved without causing any disruption to the customer site.

To help avoid some of the problems associated with poor upgrades, it is recommended that you perform the following steps when upgrading:

- Create a manual backup of the CRM program files, the registry, and the database.
- Set up a test environment that mimics the live environment as closely as possible.
- Perform a test upgrade on the test environment.
- Test the test upgrade. This is the best time to find potential problems relating to both regularly used and customized functionality.
- When you are happy with the results of the test upgrade, perform the live upgrade.
- “Sanity check” the live upgrade. A full system test should not be required at this stage as potential issues should already have been isolated and solved during earlier testing on the trial upgrade.

Chapter 8: Running a Test Upgrade

In this chapter you will learn how to:

- [Prepare for a test upgrade.](#)
- [Check customization and database changes.](#)
- [Install backups to the test environment.](#)
- [Perform a test upgrade.](#)
- [Review test upgrade logs.](#)
- [Test a test upgrade.](#)

Preparing for a Test Upgrade

A test environment is an integral part of the Sage CRM upgrade procedure. The test environment allows the Sage CRM consultant to carry out trial runs of the upgrade procedure. If errors are found during the upgrade procedure they can be dealt with on the test environment. The test environment will be useful for ensuring that an upgraded system has been tested satisfactorily, and particularly for performing crucial post-upgrade system testing around upgraded advanced customizations, regularly used functionality, and data integrity in a controlled, non-live environment.

A test environment minimizes the likelihood of downtime once the live upgrade takes place.

Ideally, the test environment should mirror the production environment. While this may not always be possible, it should be noted that the accuracy of the test results will decrease as the test environment diverges from the live environment.

Licensing

A separate license key will be 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 it should include the Extensibility Module. It will expire three months after installation.

Software Installation

To mirror the live environment successfully, Microsoft IIS, database management software (for example, SQL Server), and a clean CRM install (of the existing version) must be installed on the test server. The current live database, the live registry, and the program files must then be restored to the test environment. Please refer to [Installing Backups to the Test Environment \(page 8-4\)](#).

All third-party software that Sage CRM is using or with which it is integrated must be installed on the test environment. This may include ACCPAC Advantage Series, ACCPAC Pro Series, Fax Serve, Crystal Reports, CRM E-mail Management, and CRM Escalation Service.

Note: 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 production environment increase the end-user's chance of downtime. For example, if IIS is required to be reset on the test Web server, and the client is running Sage CRM on the same server, then the production system will be impacted.

Baseline Testing

Once you have set up your test environment, you should perform some quick tests to ensure that it is functioning as an exact mirror of the live environment. These tests should focus on the most commonly used CRM functionality and components. For example, if you generate reports of a particular type on a daily basis, you should test the exact same procedure on the test environment. If the test environment is at the customer site, it may be useful to have some CRM users perform the tasks they do regularly on the test environment.

It is not recommended that you spend a lot of time testing functionality that is never used by the customer.

Script Customizations

If the client's license includes the Extensibility Module, any changes to the Sage CRM product can be scripted into an ES file. To ensure that any customizations made in the test environment can be carried across to the upgraded live environment, it is recommended that the test license include the Extensibility Module.

Checking Customization and Database Changes

This section highlights areas which should be carefully checked during test and live upgrades, particularly with heavily customized systems.

Solo Removal

The removal of Solo from Sage CRM 7.2 onwards has introduced a number of data model changes that are likely to impact customizations relating to handling record insertion.

The following Solo-related tables, columns, and views have been removed in 7.2:

- SoloProfile
- SoloProfileOption
- Rep_Ranges
- Rep_Deletes
- Rep_Conflicts
- ClientRangesRequired

If you think your system may be affected:

1. Read the description of the changes in this section.
2. Follow the standard test upgrade procedure, which should be carried out for all upgrades, regardless of customization.
3. Check the upgrade logs to see if any errors have occurred on the upgrade.

4. After the upgrade, check to see whether you have any SQL errors, caused by the removal of the Solo fields.
5. The following areas of customization should be checked and tested:
 - CustomPages (asp)
 - Custom Lists
 - Custom Reports
 - Custom Screens
 - Create and Validate scripts
 - Custom Tabs
 - Table and Entity Scripts
 - Workflow
 - Escalation and Notification Rules
6. Also check the following areas:
 - Search SQL properties of fields
 - Search Select Advanced (filters)
 - SOAP Web Services code (WSDL is different)
 - Ajax code in Custom Content or onChange
 - .NET code
 - Self Service Block References

Phone and Email Changes in 7.1

If you are upgrading from version 7.0, to version 7.1 SP1/SP2, you will have to check for phone and email table changes. Please refer to **Checking Phone and Email Table Changes** in the *7.1 SP2 Installation and Upgrade Guide*.

Exchange Integration

If you are working with a pre-7.1 version of Sage CRM, you need to upgrade to 7.1, before upgrading to 7.3. This includes installing the Exchange Integration feature.

It is possible to upgrade from a 7.0 system, that has the Classic Outlook plug-in installed, to 7.1 SP1/SP2 and to successfully install and work with the Exchange Integration feature.

When the Exchange Integration area is exposed, all links between records in Outlook clients and records in CRM are broken - similar to what happens during an Outlook Integration Sync Info Reset.

If you were using the Classic Outlook Integration in 7.0 and want to switch to the new Exchange Integration feature on upgrade, CRM's Deduplication rules will be responsible for linking records on Exchange with records in CRM, providing they fall within the right date range for the sync. In other words, CRM does not use old Outlook IDs for deduplication or linking purposes.

The same applies to any records previously linked between CRM and Exchange under the old Exchange Integration feature. All links between records in Exchange and CRM via the old Exchange Integration feature will be broken when the upgrade to 7.1 SP2 is performed.

CRM's deduplication rules perform the deduplication or linking on any previously linked records, i.e. CRM will not use Classic Exchange Integration IDs in CRM for deduplication or linking purposes.

For more information on the Exchange Integration feature, please refer to the Exchange Integration chapter in the *System Administrator Guide*.

Installing Backups to the Test Environment

Before performing a test upgrade, you must first install the backup files to the test environment to ensure that the test environment mirrors the live environment.

To install backups to the test environment:

1. Set up a trial install of the current version of CRM. For example, if the client currently uses CRM version 7.1 SP1, install version 7.1 SP1 on the test environment. The trial key used 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 have taken from the live environment. Refer to [Restoring the Database Backup \(page 10-2\)](#) for more details.
4. Restore the **registry backup**. Refer to [Restoring the Registry Backup \(page 10-2\)](#) for more information.
5. Copy the system files that you have backed up from the backup area to the test environment.
6. Re-register the **EWARE.DLL**. Refer to [Re-registering the EWARE.DLL \(page 10-1\)](#) of this guide.
7. Restart **IIS**.

Performing a Test Upgrade

The procedure for performing a test upgrade is the same as for performing a live upgrade. Refer to [Running the Upgrade Install shield \(page 9-2\)](#) for more details.

Reviewing Test Upgrade Logs

When the trial upgrade has finished, you can view the upgrade log files. The log files can provide important information on any errors that may have occurred during the upgrade. Refer to [Reviewing the Upgrade Log \(page 9-3\)](#) for more information on reviewing upgrade logs.

Testing a Test Upgrade

When you have finished a trial upgrade, it should be tested to ensure that any bugs or errors are identified and corrected. When testing the test upgrade, you should focus on testing frequently used functionality and components. Refer to [Testing a Live Upgrade \(page 9-4\)](#) more information on testing an upgrade.

You should perform the live upgrade only when you are completely satisfied that the test upgrade has been successful.

Chapter 9: Upgrading Sage CRM

In this chapter you will learn how to:

- [Prepare for a live upgrade.](#)
- [Understand which scripts run during an upgrade.](#)
- [Run the upgrade Install Shield.](#)
- [Review the upgrade log.](#)
- [Start the CRM Indexer Service.](#)
- [Test a live upgrade.](#)

Preparing for a Live Upgrade

Before beginning a live upgrade, you should take note of the following:

- If you intend to perform the upgrade after office hours, it is recommended that you retrieve the license key and test it during office hours so that any problems can be addressed while assistance is available. To test the key, start the upgrade. If the key is not accepted, select the Cancel option and contact your license key provider. If the key is accepted, you should also select the Cancel option at this point as the purpose of this test is merely to ensure that the key is functional.
- Note that IIS is stopped for the duration of an upgrade. This will affect customer sites if there are other Web applications running on the same server as CRM. It is generally recommended that, where possible, CRM be installed on a dedicated server.
- You should give CRM end users advance notice that they will be unable to use CRM for the duration of the upgrade.
- You should do a manual backup of the database, registry, and program files. Please refer to [Why Perform Manual Backups? \(page 5-3\)](#) for more information on performing manual backups.
- Ensure that you have a backup of any system views you have customized as these may be overwritten on upgrade.
- Ensure that you upgrade to the very latest CRM release, up to and including the latest patch service pack for that release.
- If you are upgrading from a pre-7.1 version of Sage CRM, it is recommended that you review field level scripts which have been used to control access to fields in the user interface - for example, hiding a field for a certain user type. These fields may be exposed in the SData feed on the Interactive Dashboard. The SData schema supports CRM's standard security features (field security, security profiles, and territories).

Understanding which Scripts Run During the Upgrade

The following scripts run when the upgrade Install Shield is activated:

- **CustomPages.es** – updates the 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 CRM user views.
- **Tables.es** – Updates the schema, adding new tables, columns, and adjusted columns.
- **Update_indexes_mssql.sql**

Running the Upgrade Install shield

1. Insert the Sage CRM setup CD in the CD drive. The Sage CRM Installation screen is displayed. Click **Install Sage CRM** and click **Next**.
2. Review and accept the Software License Agreement and click **Next**.
3. Select **Upgrade Previous Version Of CRM** and click **Next**.
4. Choose the install you want to upgrade. You should use the default installation name, CRM, when installing and upgrading Sage CRM. Click **Next**.
5. Enter your name, company name, and license key and click **Next**.
6. Confirm your database server name, port number, and SQL Server user ID, and enter the password for this user ID. **Note:** The Window Authentication option is not available during an install or upgrade. Click **Next**.
7. Select **Backup Existing Copy Of The Database, Program Files And Registry** and click **Next**.
8. Browse to the backup location for the database and click **Next** until the HTTP Protocol And Proxy Settings dialog box is displayed.
9. If you're using the HTTPS protocol or a proxy server for Internet access, select **Use Https Or Use Proxy** and click **Next**. If you select the Use Proxy setting, enter your proxy address, port number, and authentication details if required.
10. Click **Next** and then click **Yes** to stop IIS and create backups. A dialog box tells you where the program files, database, and registry are backed up. Click **OK** to continue.
11. When the upgrade is complete, the Registration dialog box is displayed. Complete all fields on the Registration page and click **Next**. The registration details are sent to the Sage CRM registration server as a background process. If this is not successful, you can complete the registration manually in Sage CRM in **<My Profile> | Administration | System | License Key Details**. The Setup Complete Dialog box is displayed when the upgrade has completed.
12. Select **Launch Sage CRM Now** and **View Upgrade Log Files**.
13. Click **Finish**. The CRM Logon page is displayed in a new browser window.



After Sage CRM is upgraded, 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.

Reviewing the Upgrade Log

The Upgrade Log should be reviewed to ensure that all elements, such as views, tables, indexes, index constraints, and registry keys, have been fully upgraded.

To review the upgrade log:

1. To view the upgrade log, browse to **..\Program Files(x86)s\Sage\CRM\[install name] \Setup**, and open **UPGRADELOG.HTML**. The Upgrade Summary panel is displayed. The Upgrade Summary panel lists all the scripts that were run during the upgrade and indicates whether they were successful. Refer to [Understanding which Scripts Run During the Upgrade \(page 9-1\)](#) for more information on the scripts that are run during the upgrade.
2. If you want to return to the Upgrade Summary panel at any point, select the **Upgrade Summary** hypertext link at the top of the screen.
3. Check the **CRM Script Logs** on the top part of the left-hand panel. All CRM script files (ES files) that were run are listed here. Each item on the list is a hypertext link.
4. Click on a link to view a report of any of the **ES scripts** that ran. When you do this, a summary report is displayed in the right-hand panel.
5. Click on the **Expand All** button to view the full report. You can click on any of the view names or bolded items to collapse the list. You can then click on the item again to expand it.
7. Scroll down the report and review each section. The message "NB must be fixed" is displayed to indicate a problem that needs to be resolved. You need to correct the problems manually if they are indicated in this way.
8. Next, check the **SQL Scripts Logs** at the bottom part of the left-hand panel. All SQL scripts that were run during the upgrade are listed as LOG files here.
9. Click on a log hypertext link to review the log file for any of the SQL scripts that ran during the upgrade.
10. If errors occur while an SQL script is running, an additional HTML file is displayed that corresponds to the LOG file. An asterisk symbol (*) is included at the end of the HTML file name to highlight the fact that this HTML file has been generated.
11. When you click on the hypertext link of the HTML file, a summary of the error is displayed in the right-hand panel. You can click on the LOG file to view the SQL script log.
12. After you have reviewed both files, you need to resolve any problems manually.

Starting the CRM Indexer Service

The CRM Indexer Service is required to feed data to the CRM Keyword Search function. The service no longer needs to be started manually. However, if it has been stopped and you want to start it again, you can do so manually.

To start the CRM Indexer Service:

1. Select **Control Panel | Administrative Tools | Services**.
2. Right-click on **CRM Indexer Service** and select **Start**.

Testing a Live Upgrade

You should discuss testing requirements with the customer in advance. Post-upgrade testing should not involve a comprehensive test of all CRM functionality. It is recommended that test time be focused on testing:

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

Note: If the test environment is at the customer site, it can be beneficial to have some of the end users at the customer site carry out checks on frequently used functionality.

The following is a guide to functionality that should be tested post-upgrade:

Test Action	Success
Logon is successful	
Mail merge / document drop functionality working well, and with the correct plugin	
Report writer presenting in all formats (HTML, PDF, CSV, XLSX)	
E-mail management functioning as expected, including customizations	
Functionality regularly used by the customer working as expected	
Previous functional integration with third party database functioning	
Advanced customizations (.ASP pages) functioning as expected	
Custom icons copied to new install location	
Outlook and Exchange integration functioning as expected	
All plug-ins (Outlook, xEwareControl Version, and CTI) updated and working as expected	
All plug-ins compatible with and match the upgraded CRM version	
Library location checked	
Add/Find/Edit/Delete records for each of entities	
System help functioning	

Test Action	Success
Data upload functioning as expected	
Verify that the Interactive Dashboard loads successfully (My CRM Dashboard)	
Verify that Interactive Dashboard loads successfully in the Company context (Company context Dashboard), and that the default dashboard is the Company Summary dashboard	

Chapter 10: Restoring a Live Environment

In this chapter you will learn how to:

- Plan for the restoration of a live environment.
- Re-register the EWARE.DLL.
- Restore the database backup.
- Restore the registry backup.
- Uninstall services.
- Reinstall services.
- Redirect the web site.

Planning for Restoring a Live Environment

If a live upgrade fails, or if there are problems with functionality in a new upgrade, it is recommended that the customer site be returned to the pre-upgrade live environment while any problems are being addressed. This will minimize downtime at the customer site.

Note: The following steps all relate to the restoration of a 7.2 live environment.

To restore a 7.2 live environment, you must complete the following steps:

- Re-register the 7.2 EWARE.DLL.
- Restore the database backup.
- Restore the registry backup.
- Uninstall the 7.3 e-mail management and escalation services.
- Restore the 7.2 e-mail management and escalation services.
- In IIS Administration, redirect the web site from the new 7.3 site to the old 7.2 site.
- Stop and restart IIS.

Re-registering the EWARE.DLL

To re-register a 7.2 EWARE.DLL:

1. Select **Start | Run**.
2. Type **regsvr32 C:\Program Files\Sage\CRM\<install name>_backup\eware.dll** and click **OK**. The RegSvr32 dialog box is displayed.
3. Click **Ok** to complete the DLL registration.

Restoring the Database Backup

To restore the database backup:

1. Open the Database Administration tool, for example, SQL 2008 R2 Management Studio.
2. Save the restored database files to the backup folder.
3. Restore the backed up database to the old 7.2 install.

Note: Please refer to your database administration documentation for information on restoring backed up databases. If you experience any difficulties when restoring the database, you should contact the IT Administrator at the customer site.

Restoring the Registry Backup

To restore the backed up registry:

1. From the desktop on the Web Server, open **Start | Run**, and type **Regedit** in the Run dialog box.
2. Click **OK**. The Registry Editor is opened.
3. Browse to **HKEY_LOCAL_MACHINE\SOFTWARE\eWare\Config**
4. Select **File | Import**. The Import Registry File dialog box is displayed.
5. Browse to the location where you have backed up the registry and select the registry file.
6. Select the **Open** button. The Registry Editor dialog box is displayed.
7. Click **OK** to complete the registry import.
8. In the Registry Editor, browse to **HKEY_LOCAL_MACHINE\SOFTWARE\eWare\Mappings**.
9. Select **File | Import**. The Import Registry File dialog box is displayed.
10. Browse to the location where you have backed up the registry and select the mappings file.
11. Select the **Open** button. The Registry Editor dialog box is displayed.
12. Click **OK** to complete the mappings import.

Uninstalling Services

To uninstall the e-mail management service application:

1. Select **Start | Run** and type **cmd**. The DOS prompt window is displayed.
2. Browse to the folder where the EWAREEMAILMANAGER.EXE file is saved. By default, this is located in **..\Program Files(x86)\Sage\CRM\Services**.
3. Type **eWareEmailManager /u**.
4. Press the **Enter** key. A pop-up box is displayed to inform you that the service has been successfully uninstalled.

To uninstall the escalation service application:

1. Select **Start | Run** and type **cmd**. The DOS prompt window is displayed.
2. Browse to the folder where the CRMESCALATIONSERVICE.EXE file is saved. By default, this is located in **..\Program Files(x86)\Sage\CRM\Services**.
3. Type **CRMEscalationService /u**.
4. Press the **Enter** key. A pop-up box is displayed to inform you that the service has been successfully uninstalled.

Re-installing Services

You do not need to re-install the 7.2 e-mail management service application but if you want to, you can:

1. Select **Start | Run** and type **cmd**. The DOS prompt window is displayed.
2. Browse to the folder where the EWAREEMAILMANAGER.EXE file is saved. By default, this is located in **..\Program Files\Sage(x86)\CRM\Services**.
3. Type **eWareEmailManager /i**.
4. Press the **Enter** key. A pop-up box is displayed to inform you that the service has been successfully installed.

You do not need to re-install the 7.2 escalation service application but if you want to, you can:

1. Select **Start | Run** and type **cmd**. The DOS prompt window is displayed.
2. Browse to the folder where the CRMESCALATIONSERVICE.EXE file is saved. By default, this is located in **..\Program Files(x86)\Sage\CRM\Services**.
3. Type **CRMEscalationService /i**.
4. Press the **Enter** key. A pop-up box is displayed to inform you that the service has been successfully installed.

Redirecting the Web Site

To redirect the Web Site:

1. Open **IIS Manager**.
2. Browse to **Sites | Default Web Site | CRM Install**.
3. Right-click on the install name and select **Manage Application | Advanced Settings**. The CRM Properties dialog box is displayed.
4. The new upgraded site location is displayed in the Physical Path field. You must replace this path with the path for the backed up 7.2 site that you are restoring. For example, type **C:\Program Files(x86)\Sage\CRM\[installname]_backup** in the Local Path field.
5. Click on **OK**.

Chapter 11: Upgrading Multi-Server CRM

In this chapter you will learn how to:

- [Prepare for upgrading multi-server CRM.](#)
- [Understand the Multi-server CRM upgrade process.](#)
- [Run the Install Shield on the Database Server.](#)
- [Running the Install Shield on a non-Database Server.](#)

Preparing for Upgrading Multi-Server CRM

When upgrading multi-server CRM you should note the following:

- When upgrading to version 7.3 from version 7.2 , you will require a 7.3 license key.
- Your license key can be used on all of the servers in the cluster you are about to set up.
- Before beginning an upgrade, ensure that all servers (with the exception of the Database Server) are disconnected from the database.
- You can you have multiple Tomcat servers pointing at the one database provided the database is configured to provide enough connections to serve the multiple connection pools. Each Tomcat server opens a connection pool of 10 connections by default.

Multi-Server CRM Upgrade Process

When upgrading multi-server CRM, you should perform the following steps:

- Create a manual backup of the database from the CRM Database Server. Please refer to [Why Perform Manual Backups? \(page 5-3\)](#) for more details.
- For all CRM Servers in the cluster, including the Database Server, create manual backups of the program files and the registry. Please refer to [Why Perform Manual Backups? \(page 5-3\)](#) for more details.
- Set up a test environment that mimics the live environment as closely as possible. For example, if there are four servers in your multi-CRM cluster, then you should set up four separate test servers, with each one being an exact (or close) copy of one of the live servers. Refer to [Running a Test Upgrade \(page 8-1\)](#) for more information on setting up a test environment.
- Perform a test upgrade on the test environment. Refer to [Running a Test Upgrade \(page 8-1\)](#) for more information on performing a test upgrade.
- Test the test upgrade. Refer to [Running a Test Upgrade \(page 8-1\)](#) for more information on testing a test upgrade.
- When you are happy with the results of the test upgrade, perform the live upgrade on each of the CRM Servers, starting with the Database Server. Refer to [Running the Install Shield on](#)

the Database Server (page 11-2) and Running the Install Shield on a non-Database Server (page 11-3) in this chapter for more details on upgrading each CRM server in the cluster.

- Test the live upgrade. Refer to Testing a Live Upgrade (page 9-4) for more information about testing a live upgrade.

Running the Install Shield on the Database Server

To run the upgrade Install Shield:

1. Place the Sage CRM set up CD in the CD drive. The Sage CRM Installation screen is displayed.
2. Select **Install Sage CRM**. The Install Shield Wizard is displayed.
3. Click on the **Next** button to continue.
4. Review the Software License Agreement. If you accept all of its terms, select the I accept the terms of the license agreement option and click **Next**; otherwise select the I do not accept ... option and Cancel to end the installation. If you accept the license agreement, the setup type dialog box is displayed.
5. Select the **Upgrade Previous Version of CRM** option.
6. Click **Next** to continue. If you have more than one CRM install, the Select Install dialog box is displayed.
7. Choose the install you wish to upgrade.
8. Click on the **Next** button. The Customer Information dialog box is displayed.
9. Make sure your name is in the **Name** field, and your company name is in the **Company Name** field.
10. Enter the **license key** in the License Key field.
11. Select **Next**. The Database Server Login dialog box is displayed.
12. Confirm your database server name, port number, and your SQL Server user ID, and enter the password for this user ID.
13. Select **Next** to continue.
14. The Backup Files dialog box is displayed.
15. Select the **Backup Existing Copy Of The Database, Program Files, And Registry** option.
16. Select **Next**. The Database Backup Location dialog box is displayed.
17. Browse to the backup location for the database.
18. Click on the **Next** button. The Start Copying Files page is displayed.
19. Click on the **Next** button. A dialog box is displayed informing you that you need to stop IIS to continue.
20. Click **Yes**. IIS is stopped and the backups are created. When this process has finished, a dialog box is displayed to confirm where the program files, database, and registry have been backed up.
21. Click **OK** to continue. When the installation is complete, the Registration dialog box is displayed. All fields on the Registration dialog are required.

22. Complete all fields on the Registration page.
23. Select **Next**. 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**.
24. Select **Finish** to complete the installation process. The Readme file and the Logon page are displayed.

Running the Install Shield on a non-Database Server

To run the upgrade Install Shield:

1. Place the Sage CRM set up CD in the CD drive. The Sage CRM Installation screen is displayed.
2. Select **Install Sage CRM**. The Install Shield Wizard is displayed.
3. Click on the **Next** button to continue.
4. Review the Software License Agreement. If you accept all of its terms, select the I accept the terms of the license agreement option and click **Next**; otherwise select the I do not accept ... option and Cancel to end the installation. If you accept the license terms, the setup type dialog box is displayed.
5. Select the **Upgrade Previous Version of CRM** option.
6. Click **Next** to continue. The Select Install dialog box is displayed.
7. Choose the install you wish to upgrade.
8. Click on the **Next** button. The Customer Information dialog box is displayed.
9. Make sure your name is in the **Name** field, and your company name is in the **Company Name** field.
10. Enter the **license key** in the License Key field.
11. Click on the **Next** button. A dialog box is displayed to remind you that all servers must be disconnected from the database.
12. If you are ready to continue, select **Yes**. The Backup Files dialog box is displayed.
13. Select the **Backup Is Not Required** option.
14. Select **Next**. A dialog box is displayed informing you that you need to stop IIS to continue.
15. Click **Yes**. The Setup Complete Dialog box is displayed when the upgrade is complete.
16. Select the **Launch Sage CRM Now** and **View Upgrade Log Files** checkboxes.
17. Select **Finish**. The CRM Logon page is displayed in a new browser window.

Chapter 12: Upgrade Checklist

In this chapter you will learn how to:

- Build checks into the upgrade process.

Sample Upgrade Checklist

The following is a list of items that might be included on an 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 dependant 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 CRM 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	

Test Action	Complete
Upgrade Logs	
Review upgrade logs for errors	
Investigate each error and document resolution or outcome	
Complete resolutions for each error	
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	

Test Action	Complete
Upgrade Logs	
Review upgrade logs for errors	
Investigate each error and document resolution or outcome	
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	

Chapter 13: Troubleshooting

In this chapter you will learn how to:

- [Troubleshoot the view error.](#)
- [Troubleshoot redirector issues.](#)

View Error

A common error can occur when a standard Sage CRM view has been modified in the implementation to include specific fields. During the upgrade process, CRM checks all of the standard views against the expected view. If it finds a standard view is in any way different from what was expected, it will log an error, retain the current view syntax, and add the upgraded view with the view name appended with `_New`. For these cases, it is important to ensure that the only change to the affected view is the additional fields that had been added prior to the implementation.

Troubleshoot Redirector Errors

It is not recommended that you run two different versions of Sage CRM on your machine, unless required for test purposes when preparing for an upgrade to 7.3.

It is possible to run Sage CRM 7.3 on a machine already using Sage CRM 7.2 . Sage CRM 7.2 uses the Managed Fusion URL Rewriter and Sage CRM 7.3 uses the ARR and URL Rewriter modules of IIS.

You can find the Sage CRM 7.2 rewriter under the Services and IISUtils folder of the installation directory.

```
..\Program Files (x86)\Sage\CRM\Services\IISUtils\CRMRewriter
```

However, please note that if Sage CRM 7.2 is installed after CRM 7.3, then it will overwrite the SData settings in IIS, thus removing the rewriter rules for the Sage CRM 7.3 install.

This can be fixed by running the Sage CRM 7.3 installer again and by choosing the option **Change existing install**.

Once this is done, select the install of Sage CRM 7.3 from the drop down. The required IIS rewriter rules will be recreated for SData in IIS. Because requests for the Sage CRM 7.2 installation will not find a match in the IIS 7.x rewriter rules, they will then use the Managed Fusion URL rewriter as before.

