

Caesar webCRM



Technical Overview

SuperOffice Caesar CRM

Our Challenge

Caesar webCRM is the family name for the web based applications in Caesar CRM. The goal of this product suite is to create a global workplace for all companies engaged in processes closely linked to the customer.

Since Caesar webCRM is intended for large corporations operating in various regions of the world, it has been developed to support various languages, browsers and business rules.

The possibility to adopt the product to different customer requirements has been one of the major challenges. A description of the standard product and how it can be customized will be shown in the following text.

Software architecture

Caesar webCRM is a 100% .net managed code solution based upon the Microsoft .net Framework, and is developed in Microsoft Visual Studio .net.

The architecture is a distributed n-tired solution which means that the solutions are built in blocks that can run in a distributed environment on multiple machines.

.net remoting services over TCP is used for transaction issues.

Support for multiple users in different countries

Browser independency

By using the well known HTML standard we make sure the applications will work properly in different browsers of different versions. The application runs on standard web browser such as Firefox and Microsoft Internet Explorer on Windows, Mac, Linux and other platforms. A newer browser will however allow more complex functionality and a richer user interface.

The UTF-8 encoding ensures a correct presentation of the applications in languages with different character sets. This applies regardless of browser used.

International support

Since users will be located all over the world, the goal has been to enable the users to customize the applications to national standards. Caesar webCRM therefore support user configuration of regional settings and time zones. This means that wherever the user is situated, date and time can be presented in accordance with local standards.

Languages are stored centrally in the database, making it possible for each user to select which language the application should be presented in. This also means new languages can be implemented at a low cost.

The language is set independently of the regional settings.

All text information in the database is stored in the Unicode format which means that you can use over 65,000 different characters which covers almost every language in the world.

Dynamic help system

When working with a wide spread and customized system the demands on the help system is high. Traditional, static help system has a way of being inaccurate when you differ from standard and make customizations.

An example could be if you change the name and behavior of a field in the system then you would also have to update the help system on several places.

Caesar webCRM has a dynamic help system that reflects the system even during new customizations. Once you change the name or behavior of a field or a code, it is automatically updated in the help system. You can also customize the help system and the information in it to meet your needs.

The information you put in the help system is also available as "tooltip" on every field caption in the system.

Customization

In order to present a standard product which can be used by any company and any user group, the demand for easy customization has led to the following solutions.

Role-based application management

Different user groups have different needs, therefore it must be possible to assign each role-based application to one or more groups of users to avoid that all users gets "everything", which then easily can end up in a large complex system that no one will use.

For this reason Caesar webCRM has a function called "Role-based Applications" which allows the system administrator or a super user to clone a base application (webSales etc.), customize and give it a new name and then assign it to a group of users. Each clone can have their own set of information objects, field rules, filters, codes and GoTos.

An example could be "Customer Service" – The users at the customer service department don't need the same set of functionality as the sales people. So you can make a clone of the standard webSales; hide all functionality not needed and add some new customizations especially for the customer service. For example new required fields, special reports and GoTo integrations to an external knowledge system.

Filters

A filter is a view of some parts of the database. Most menu alternatives lead directly to some kind of filter. For example, "My activities" is a view of all activities belonging to the current user.

Sets of standard filters are installed in all the webCRM applications. To change the behavior of these applications, the standard filters can easily be replaced by customized filters. This can be a good way to change some of the business rules.

Filter has support for linking to external systems and high light features for displaying important information.

GoTo

GoTo-links are powerful for integrating the web applications with other web based applications like various internal Caesar applications, external applications within the current network or external applications on the Internet.

The links can be configured to fit the format of other applications and also to display additional information about different objects in the Caesar database (Customer, Contact, Activity, Object etc).

An example could be an extra button in the opportunity dialog that opens up a sales report related to the current opportunity, gathering information from the ERP system.

Skin

A skin, or color schema as it is named in the application, can be used to customize the look and feel of the application. In the standard edition you have 12 sets to choose from.

With skins you can customize almost everything you can see in the application, like the background color, text color, text font and size, button style and so on.

Skin is ideal for companies who want to have their own corporate identity in the system including logos etc.

Fields and Captions

All the texts shown in the applications are stored in the database, with a description aiding the user in their daily use of the product. Texts and descriptions can be edited and translated into other languages.

All fields in the application can be modified into four different modes: Editable, Required, Read-Only and Hidden. This can also be combined with information about the current context, for example a field can be editable only if it's not imported to the system from an external source.

The corporate business rules and language use can efficiently and easily be implemented through these customizations.

Codes

A code field is an enumerated field, which is presented in select boxes (drop downs) in the applications. The codes can be added, edited and deleted. They can also be translated to other languages.

Some codes in the system can have rules connected to them, making them dynamic, for example if you set an activity to be of the type "Phone call" all other "drop-downs" in the activity dialog will automatically change so that their behavior corresponds to what is relevant when you make a phone call.

Summary

Through all the built-in functionality, Caesar webCRM offers large corporations operating in various regions of the world, the possibility to share one central market database.

Adding the possibilities of customization, Caesar webCRM offers great flexibility regarding user interface, business logic and integration with other web based applications.

Territory System

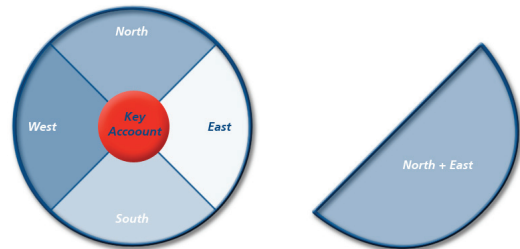
All information in Caesar webCRM is stored in one central database. In many cases, there is however a need to split the database into different logical parts.

The Caesar Territory System segments the marketplace between the sales groups. The database is divided into different virtual databases, so called territories. These are separated from each other, preventing users from accessing information outside his/hers territory. It allows each salesman to focus on his particular share of the market.

In the system you can define and redefine regions, territories and sub-territories based on customer information, geographical boundaries or other criteria. Customers automatically change territory when their criteria change.

You can create temporary territories for campaign marketing. Some territories are for administrable purposes and

are used by other systems. Territories can consist of other (sub) territories and can be combined into larger territories, regions.



Integration – Caesar .net SDK

The Caesar .net SDK is a developer kit consisting of documentation and a couple of useful assemblies written in the Microsoft .net Framework.

The SDK can be used when creating custom forms in Caesar webCRM. It is also suitable for other types of customizations such as server to server integration with other systems.

Caesar.Web.Proxy.dll

Caesar.Web.Proxy.dll is used on the web server to obtain information about the currently logged on user (selected language, culture, user id, etc).

It also has functions for retrieving field captions and descriptions from the database.

The main purpose of this assembly is to create custom forms that need information about the current user or needs to display field captions and other texts that are located in the database.

This assembly can only be used from within the same web-application as Caesar webCRM.

Caesar.Data.Proxy.dll

Caesar.Data.Proxy.dll is a very powerful assembly to select/insert/delete data in the Caesar database. It can also be used to handle user sessions (get session info/login/logout).

When retrieving data from the database, the result can either be a simple array of data or XML (Caesar Xml Interface). When saving or deleting data, XML (Caesar Xml

Interface) is the option, all database operations will automatically apply business rules such as logging, history etc.

This assembly can be used from any computer that has access to the Caesar CRM Data Server (ex the web server or database server).

Caesar Xml Interface

The Caesar Xml Interface is a well defined Xml Schema used to update/insert/delete data in a Caesar CRM database.

Several commands can be executed with the Xml Interface as one batch (optionally as one transaction). Each command can be one of the following types:

- SelectCommand
- SaveCommand
- DeleteCommand
- PredefinedCommand

The select command is used to retrieve data through SQL select statements.

All save and delete commands will automatically apply business rules such as logging, history etc.

A predefined command is actually a VSA script (.net Framework script). This gives the ability to mix SQL commands with compiled .net code written in Visual Basic .net or JScript .net.

The result from one command can be used as parameters to another command in one batch.

Main Architecture

Tiers

Web Server (IIS)

Caesar webCRM applications run on Internet Information Server. The web server handles all requests from the user's browser to the different applications and returns web pages to the requesting browser.

This tier contains the presentation logic and the high level business logic for Caesar webCRM.

Caesar CRM Data Server

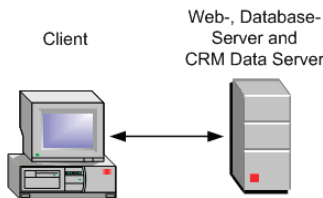
The Caesar CRM Data Server is a .net Windows Service, which handles all communication between the applications and the database. This tier contains a considerable amount of low level business logic.

Database

The Database store all the CRM information and relations between them.

It also contains a lot of extra system information, such as meta data representing the data structure, users and permissions, languages, history and logging information from the system.

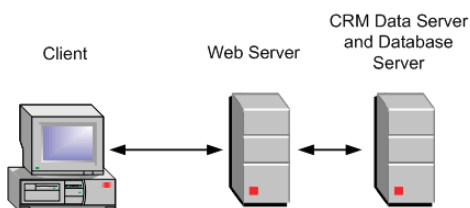
Architecture



Central

This is the simplest way of installing the Caesar webCRM applications. It is easy to administrate and the cost is low since you only need one server. The main disadvantage is that performance may suffer because all system components use the same resources. This solution is recommended for up to 50 active users.

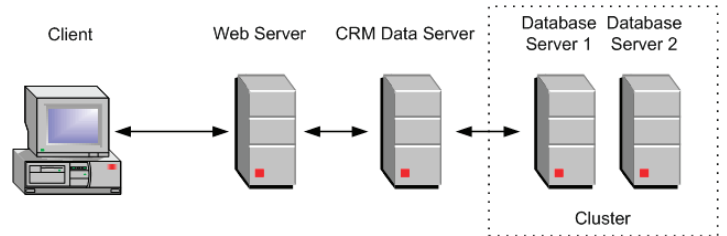
Distributed



Two Servers

This is the recommended solution. It improves performance at a reasonable cost. Since most communication takes place

between the Caesar CRM Data Server and the Database, the best solution is to install them on the same machine and the IIS on another.



Three Servers and n Servers

This solution is preferred when high performance is required for many simultaneous users. However, it can be quite costly since you need three or more different servers to set up the environment.

Documents and Collaboration

Communication and collaboration is a central part of a modern CRM solution. Caesar webCRM has built in document and e-mail management and support for calendar integration on a server side basis.

Document system

Clients running on a Microsoft Windows platform can take advantage of the improved document management. In this case the solution uses an ActiveX component which runs on the user client and has support for mail merge and MS Office templates (Word, Excel and PowerPoint). The documents will be downloaded to the client and all integration will take place there. When you have finished editing the document, it will automatically be uploaded to the central document storage server.

However, ActiveX is not required for basic document management.

The solution uses HTTP protocol for up-and-down loading documents and files.

Document can be stored in two ways, as short cuts, which means that the document remains on the original location, or on a document server within the current network, which stores all documents/files connected to Caesar webCRM.

E-Mail

For email integration Caesar webCRM uses the widely used IMAP protocol, which means that almost every e-mail system can be used including Microsoft Exchange, Notes and GroupWise. The supported formats are plain text, HTML and RTF.

With email integration you will be able to archive an email from your inbox as an activity in Caesar CRM.

Calendar integration

Calendar integration is used to synchronize activities in Caesar with appointments in Outlook. If you move a Caesar appointment in Outlook it will be moved in Caesar CRM and vice versa.

When using calendar integration, an Exchange Server with version 2000 or later is required. An Exchange agent who triggers on updated appointments is installed on the Exchange server and is connected to the user's calendar. A component is also used to communicate the updated appointment back to the Caesar CRM Data Server.

When an activity is updated in Caesar, a message is sent to Microsoft Message Queue (MSMQ). The Collaboration Engine component gets the message from MSMQ and updates the Exchange Server.

Performance

Performance is a very important issue in Caesar webCRM and a large amount of design and implementation has been spent on this. The goal has always been that the solution should perform excellent for a single user as well as scalable for multiple users.

The use of frames and well designed HTML-pages, are optimized to minimize the number of roundtrips and the amount of HTML sent between the client and the server. This increases performance of the application when the bandwidth is low or the latency is high.

Caesar webCRM uses cache objects to temporarily store frequently used information in memory. This gives greatly improved performance in comparison to reading the information directly from the database each time. This also reduces the workload on the servers.

The Caesar webCRM contains two different cache objects. These are described below.

Enterprise Service Cache

The Enterprise Service Cache is used to cache all current sessions' information and their state. The cache also handles the meta data, system settings and connection information.

Caesar Web Cache

The Caesar Web Cache runs on the web server and stores temporary and important information. It is hierarchical and store global, database specific, user specific or browser specific information. The cache object lives in the scope of the web application. This means that no unnecessary web server session state is used, which increases performance, especially when web frame sets are being used.

System requirements



Caesar webCRM version 5.3.0

Caesar Market Database Requirements

Supported databases:

- Microsoft SQL Server 2005 with the latest service pack (recommended)
- Oracle Database 11g (recommended)
- Oracle Database 10g Release 2
- IBM DB2 Universal Database 9.5 with the latest fixpack (recommended)

Caesar webCRM/Saint Server Requirements

Hardware requirements

Caesar webCRM/Saint Server requires the following minimum hardware configuration (recommendation for up to 100 users):

- Computer/processor: 1.8 GHz Pentium (Xeon P4)
- Memory: 2 gigabyte (GB) of RAM

Software requirements

- Windows Server 2008 (32 or 64-bit) with the latest Service Pack (recommended)
- Windows Server 2003 (32 or 64-bit) with the latest Service Pack
- Internet Information Services (IIS) Version 6.0 or later
- Microsoft .net Framework 2.0 (Installed during Caesar webCRM installation)

Caesar Market Database requirements

- Market Database version 408:7 or later
- Language system version 7 or later

Caesar webCRM/Saint Client requirements

- Caesar webCRM/Saint is accessed through a web client such as Microsoft Internet Explorer or Mozilla Firefox.

Requirements for using the Extended ActiveX component that manage documents on clients

- Microsoft Windows Operating System and a 32-bit version of Microsoft Internet Explorer
- Microsoft .net Framework 2.0 (Installed during activeX installation)
- Installation of CaesarDocument.msi

Requirements for using Caesar for Outlook

- Microsoft Windows Operating System
- Microsoft Office 2003 or 2007
- Installation of Setup.msi for Caesar for Outlook
- Microsoft VSTO 2005 SE runtime (Installed during Caesar for Outlook installation)
- Microsoft .net Framework 2.0 (Installed during Caesar for Outlook installation)

Requirements for using the quick start help

- Adobe Reader 7 or later

Caesar CRM Data Server Requirements

Hardware requirements

Caesar webCRM/Saint Server requires the following minimum hardware configuration (recommendation for up to 100 users):

- Computer/processor: Dual 1.8 GHz Pentium (Xeon P4)
- Memory: 4 gigabyte (GB) of RAM

Software requirements

- Windows Server 2008 (32 or 64-bit) with the latest Service Pack (recommended)
- Windows Server 2003 (32 or 64-bit) with the latest Service Pack
- Microsoft .net Framework 2.0 (Installed during Caesar CRM Data Server installation)

Territory System requirements

If administrating a territory database, the following components are required:

- Microsoft SQL Server 2000/2005 territory database
- Microsoft SQL Server 2005 Management Objects (included in the SQL Server 2005 client or as a separate download from Microsoft)

IBM DB2 requirements

If using IBM DB2 as database server, the following IBM DB2 client components are required:

- IBM DB2 Client 9.1 with the latest fixpack
- DB2 .net provider 9.0.0.2



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