# Sage ACT! | White Paper

## Architecture, Customization, and Integration

Sage ACT! Gives You Full Control and Flexibility with Feature-Rich, Customizable Contact Management Platform

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## Introduction

Sage ACT! is the #1 selling contact and customer manager that helps you make contact, build relationships, and get results. This award-winning solution's architecture is founded on a feature-rich and customizable contact management platform, with a focus on scalability, reliability, and extensibility. Sage ACT! empowers you to tailor the product to your business via custom fields, layouts, reports, and a host of other in-product customizations.

This white paper discusses the Sage ACT! architecture, deployment methods, customization, and integration capabilities with other products and is intended for IT managers or system administrators who want to better understand the underlying platform and capabilities. The information in this white paper is applicable to Sage ACT! Pro and Sage ACT! Premium (which includes access via Windows® and the web).

Some of the features discussed are only applicable to a specific product or tier, and these have been highlighted as appropriate. Further, some of the user features are only available to certain user roles such as Administrators or Managers. Sage recommends that you consult your product documentation for a complete list of features, applicability, and integrations.

*The Sage ACT! architecture is comprised of layered tiers that provide scalability, reliability and extensibility.*
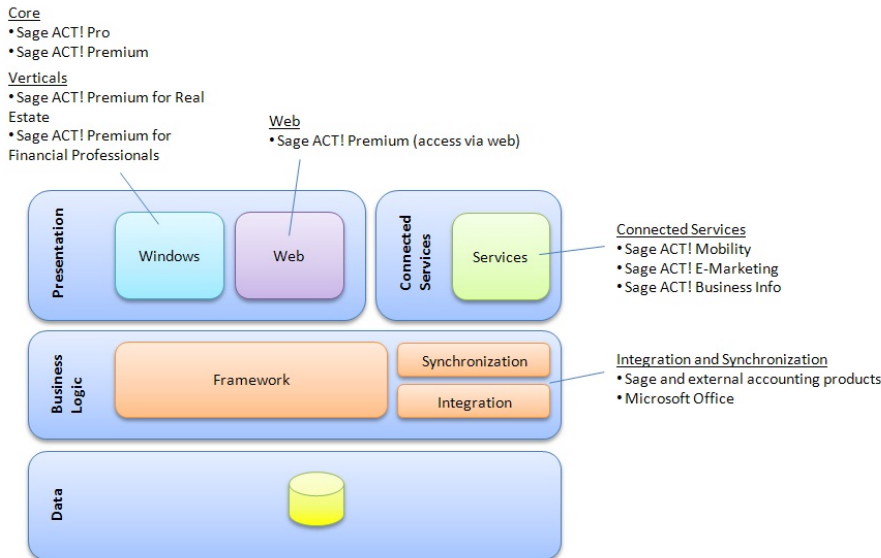


*Figure 1: This diagram depicts the architecture of Sage ACT!.The layered tiers include: database, business logic, presentation and connected services.*

## Architecture Overview

### Database Layer

Sage ACT! leverages a full Relational Database Management System (RDBMS) at the back end to support scalability and stability. Sage ACT! uses Microsoft® SQL Server® as a database platform: specifically, Microsoft SQL Server 2008 R2 Express Edition for the Sage ACT! product, and the option of Microsoft SQL Server 2008 R2 Express or Microsoft SQL Server 2008 R2 Standard Edition for the Sage ACT! Premium and Sage ACT! Premium (access via web) products.

The Sage ACT! Business Logic layer is insulated from database-specific access via the Data Access layer, which can be viewed as an object persistence layer, servicing any requesting object that

requires database operations.
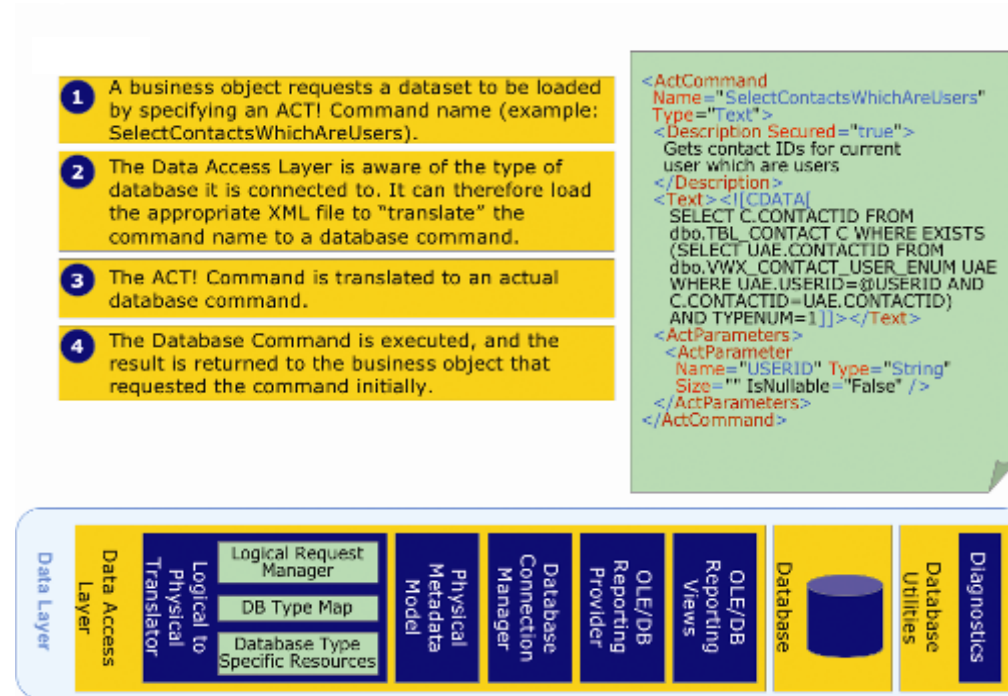


Figure 2: This example shows the use of the Data Access Layer.

Sage ACT! was designed with specific database goals and objectives in mind:

- Industry-leading RDBMS (relational and integrity)
- Client-server architecture
- Scalability[1]
- Transactional durability
- Recovery model / backup
- Auto tuning
- Low maintenance
- Database portability across database editions
- .NET complementary

### The Business Logic Layer

Core Sage ACT! functionality, logic, rules, and access to business entities are encapsulated in the Sage ACT! Framework. This Framework supports scalability in its design by keeping a disconnected model between the Business Logic and Data tier and through its advanced fetching and caching architecture.

The Sage ACT! Framework is the Business Logic layer for the Sage ACT! platform and a crucial component of the Sage ACT! SDK, which is leveraged across the Sage ACT! product family. Sage ACT! Pro, Sage ACT! Premium, and Sage ACT! Premium (access via web) products were built on the Sage ACT! Framework; all integrations leverage the Framework.

The Sage ACT! Framework was designed using the principles of object-oriented design. This allows for complex base infrastructural components to be created, which benefit several features of the product. One such area is the Smart Lists base component.

*The Sage ACT! Framework was designed using the principles of object-oriented design.*

1 Scalability will vary based on hardware and size and usage of your database. Published minimum system requirements found at www.act.com/2011systreq are based on single user environments. You must purchase one license of Sage ACT! per user.

High-level entities in Sage ACT! are managed, retrieved, edited, and created using entity managers, such as Contacts Manager, Opportunities Manager, etc. These managers are all built on a base component called Smart Lists. The Smart Lists component is an intelligent agent mediating access of the database by the application. It includes several advanced features that enhance Sage ACT! scalability[2] and performance, such as:

- Collection Management: Smart Lists mediate the data access, handling all data source interactions and returning a collection of high-level objects that the application can manage and manipulate.
- Predictive Data Fetching: The Smart Lists pre-fetch data in the region of the window that is currently being viewed, based on scrolling and user interaction.
- Cache Management: Smart Lists manage the "staleness" of information in the list using advanced heuristical and deterministic algorithms.
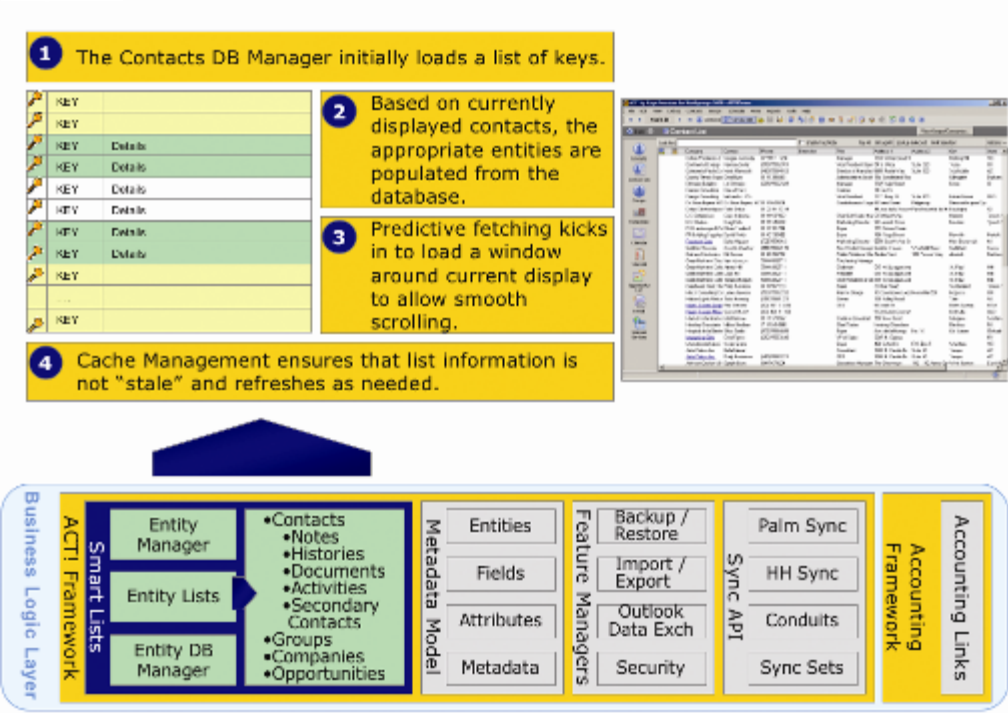


*Figure 3: This example shows the use of Smart Lists in the Business Logic Layer.*

### Presentation Layer

The Sage ACT! platform contains a familiar presentation layer across Sage ACT! Pro, Sage ACT! Premium, and Sage ACT! Premium (access via web). Sage ACT! Pro and Sage ACT! Premium continue to provide rich client capabilities for the end user. Sage ACT! Premium (access via web) presents the Sage ACT! Framework's capabilities via a web browser such as Internet Explorer® and Firefox®.

Sage ACT! lets you fully customize the database fields according to your needs. It offers enhanced viewing of data by customizing layouts and customizations via the Report Designer, as well as many other customizations, data manipulation, and filtering – all built into the product.[3]

2 Scalability will vary based on hardware and size and usage of your database. Published minimum system requirements found at www.act.com/2011systreq are based on single user environments. You must purchase one license of Sage ACT! per user.

3 In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

Furthermore, the Sage ACT! product line supports extending the Presentation layer via custom functionality by third-party add-ons, custom controls, and custom tabs. Sage ACT! Pro and Sage ACT! Premium also provide composite application support, allowing elements of the Presentation layer, such as the scheduling dialog, to be used from external, third-party applications for tight integration with Sage ACT!.

Figure 4: This example shows how layouts are used in the Presentation Layer.

## Sage ACT! Premium (access via web) and AJAX
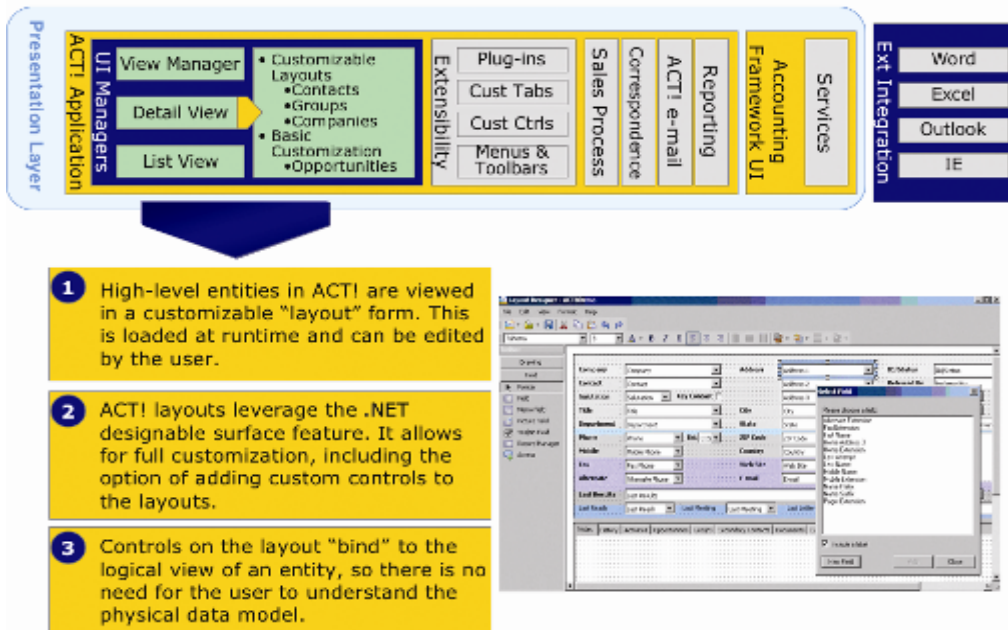
### What is AJAX?

If you have used Flickr® (photo sharing) or Google Maps™, then you have already experienced AJAX-based web clients. AJAX (Asynchronous JavaScript™ and XML) is a useful way to create dynamic user interfaces leveraging proven technology. With AJAX clients, most of the user interface data stays on the screen and gives the sense of continuity (no more tumbling hourglasses or filling page load bars).

### AJAX Provides Fast Navigation in Sage ACT! Premium (access via web)

Sage ACT! Premium (access via web) makes extensive use of AJAX to provide data navigation that is both highly interactive and fast. In Sage ACT! Premium (access via web), you navigate through a number of entity details that are presented in a consistent layout. Sage ACT! Premium (access via web) follows a design pattern of creating the presentation layer with non-data-bound controls, so the browser asynchronously fetches the entity fields from the server and populates the presentation layer on the client side. Using this pattern, as you navigate through the entity details, only the entity data is updated on the browser side. The layout controls are simply re-populated with the new data, not re-drawn or re-created. The same pattern is used in sorting and resizing of columns of entity tabs. The result is a highly interactive user experience and a reduced server load.
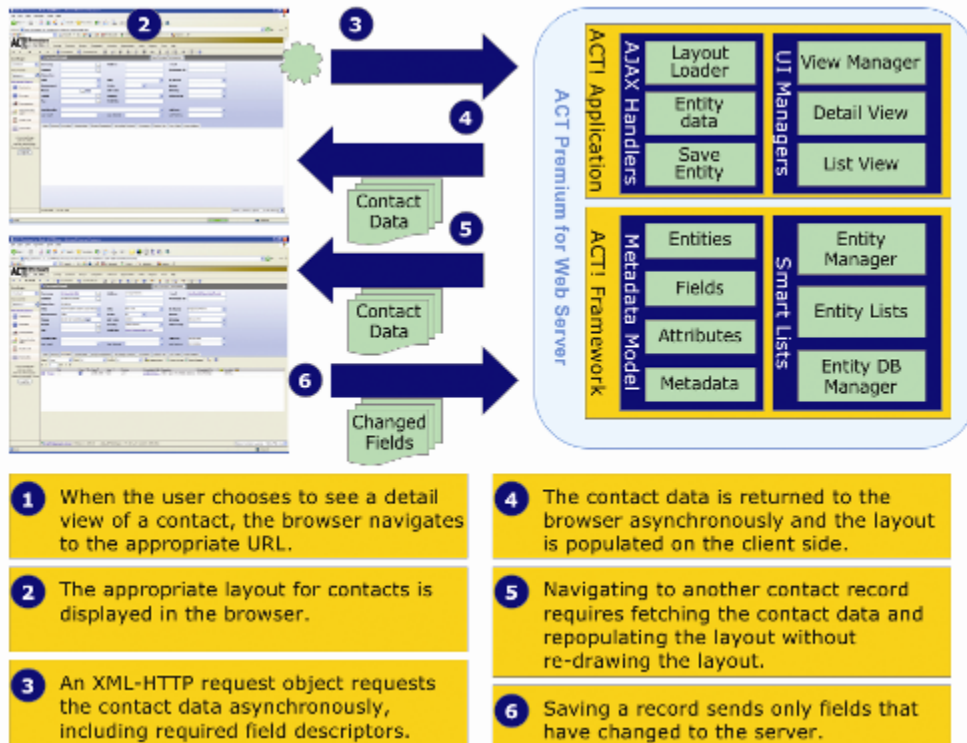
**① When the user chooses to see a detail view of a contact, the browser navigates to the appropriate URL.**

**② The appropriate layout for contacts is displayed in the browser.**

**③ An XML-HTTP request object requests the contact data asynchronously, including required field descriptors.**

**④ The contact data is returned to the browser asynchronously and the layout is populated on the client side.**

**⑤ Navigating to another contact record requires fetching the contact data and repopulating the layout without re-drawing the layout.**

**⑥ Saving a record sends only fields that have changed to the server.**

*Figure 5: This illustrates how AJAX provides fast navigation of contact details.*

## Customization

### Customizing[4] Fields

One of the powerful features of Sage ACT! is its ability to allow full customization of fields. In Sage ACT!, the field sets of primary entities (Contact, Group, Company, Opportunity, and Opportunity Product) are fully customizable, since these types are metadata-driven, and much of their landscape and data is discovered dynamically.

These entities have fully customizable fields that are stored by Sage ACT! as Field Descriptors.
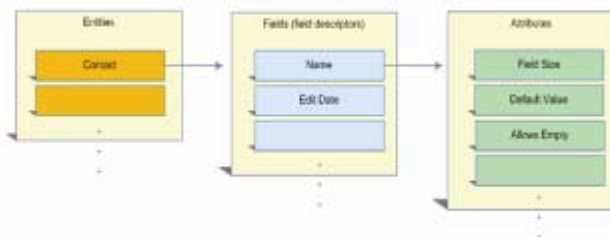


*Figure 6: Sage ACT! allows for the full customization of entities, fields, and attributes.*

In Sage ACT!, Field Descriptors define a property or field in numerous ways, such as the type (string character, numerical, etc.), whether it is read-only, specific types such as uppercase or phone numbers, and the field name displayed in the application.

New fields can easily be created using the Interactive User Interface (IUI) task screens.

4  In Sage ACT! Premium (access via web), administrative functions must be performed on the web server

*Figure 7: This Interactive User Interface task screen allows you to define fields easily.*

The three types of fields in Sage ACT! are:

- System not editable fields – these fields are installed and maintained by the database. Examples are Last Meeting or Edit Date fields. You cannot use Define Fields to modify System not editable fields, but you can modify their position in a layout.
- System editable fields – you cannot delete System editable fields, such as Contact, Phone, and Address fields 1-3, and you are somewhat limited in how you can modify them. For example, you cannot delete the Contact field, but you can prevent it from accepting a blank value. Although you cannot delete a System editable field, you can remove it from a layout.
- User defined fields – these are fields you create and define. There are ten default user defined fields on the User Fields tab in the Contact record that can be customized. You can create other user-defined fields as well.

Some unique ways you can customize[5] Sage ACT! fields include:

- Adding special data types. Data types define the value a field can accept, such as text or numbers, pictures, or check boxes. Special data types called annual events are used for birth dates, anniversaries, or policy renewals. Users can perform a lookup on upcoming annual events.
- Generating a history each time the field changes value. The history shows the user who changed the field and what the data was before the change was made.
- Defining drop-down lists for easy data entry and improved data consistency. These lists can be customized by end users or controlled only by the Sage ACT! Administrator.
- Setting fields as primary fields. Primary fields are used to copy data from one record to another, such as when you duplicate a record.
- Setting a trigger to launch an activity series, application, or URL when a user enters, exits, or changes a field. The activity series template, application, and URL must exist for it to be assigned to a trigger. An easy way to create a URL file is to drag a bookmark from the Internet Explorer® Favorites list to the desktop.

5  In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

- Linking a field between a company and contact record.[6] Each time a linked field is changed on the company record, the change will occur in all linked contact members belonging to the company. For example, changing the address for the company record will "push" those changes down to all linked contacts.

## Customizing[7] Layouts

You can customize Sage ACT! layouts for contacts, companies, opportunities, and groups using an easy-to-use WYSIWYG (What You See is What You Get) interface. Each entity can have multiple layouts that display different sets of fields depending on user requirements.

With the layout designer, you can achieve the following:
- Create new layouts
- Modify layouts
- Add or remove fields
- Add or remove objects and graphics
- Add or hide tabs
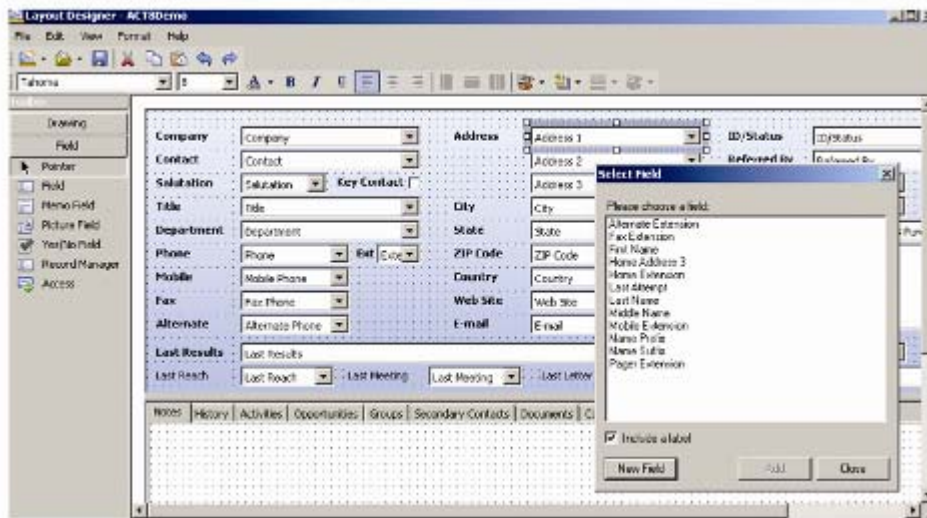- Modify field entry order (Tab and Enter stops)



*Figure 8: With the layout designer, you can customize layouts for contacts, companies, opportunities, and groups using an easy-to-use WYSIWYG interface.*

Sage ACT! Pro, Sage ACT! Premium, and Sage ACT! Premium (access via web) can use the same layouts. This enables significant time savings since the products can share one set of customized layouts.

## Customizing[8] Reports

Sage ACT! includes a Report Designer that can be used to create new reports or to customize more than 50 standard reports that ship with Sage ACT!. The users can export most reports to HTML, PDF, or email. The user can add custom fields, which are fully integrated into the Report Designer.

Both Sage ACT! Premium and Sage ACT! Premium (access via web) can use the same reports. This enables significant time savings since the products can share one set of customized reports.

6 Not all fields can be linked and linked fields must be compatible.

7 In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

8 In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.
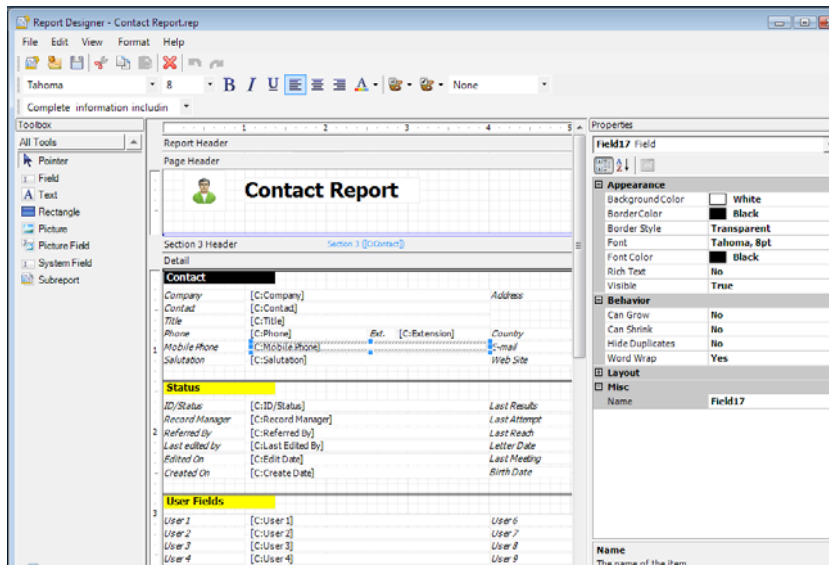
*Figure 9: The Report Designer can be used to create new reports or to customize the standard reports included in Sage ACT!.*

### Customizing[9] Word-Processing Templates

With Sage ACT!, users can create documents, such as letters, memos, and fax cover sheets. Sage ACT! includes a word-processing tool, or users can use Microsoft® Word (if it is installed). Users can also create and personalize documents to send to a contact, or use mail merge to create documents for multiple contacts, or create documents that are not associated with contacts.

Document templates help users create documents, labels, envelopes, and other templates, check spelling after document creation, attach it to a contact record, print it, or attach it to an email message. If users have Sage ACT! version 3.x, 4.x, 5.x (2000), or 6.x (2004) document templates, they can convert[10] those documents to the current version.



*Figure 10: The Sage ACT! Word Processor allows you to edit templates.*

*Sage ACT! includes a word-processing tool so users can create and personalize documents to send to a contact, or multiple contacts.*

## Customizing[11] Dashboard Components

Sage ACT! Pro, Sage ACT! Premium, and Sage ACT! Premium (access via web) include a Dashboard which provides a comprehensive, graphical representation of key activity and opportunity information in a highly interactive format, so users and managers have the information they need to best tackle their day and be more productive. In addition, the Sage ACT! Premium Dashboard provides a roll-up of team activities so managers get the information they need to quickly gauge performance status of all team members to more effectively set individual user and team targets.  An administrative dashboard is also available to view user status, synchronization status and remote database information, all by user.  A contact dashboard is available to view recently created and edited contacts.

The Sage ACT! Dashboard is flexible and customizable, allowing users and managers to customize individual components or create new ones[12] to best suit how they work. With the ability to apply filters to Dashboard components, users and managers have the flexibility to view activity and opportunity information based on what's most relevant to the team's operation. Managers can set default filters to view all users' data or pieces of it for further analysis. In addition to customizing existing components, Managers or Administrators have the ability to add or remove components, change titles or legends, use drag and drop functionality with the Dashboard Designer for easy customization of any default Dashboard, or create new Dashboard components based on the needs of the team.

*Users and managers can apply filters to Dashboard components to view activity and opportunity information.*
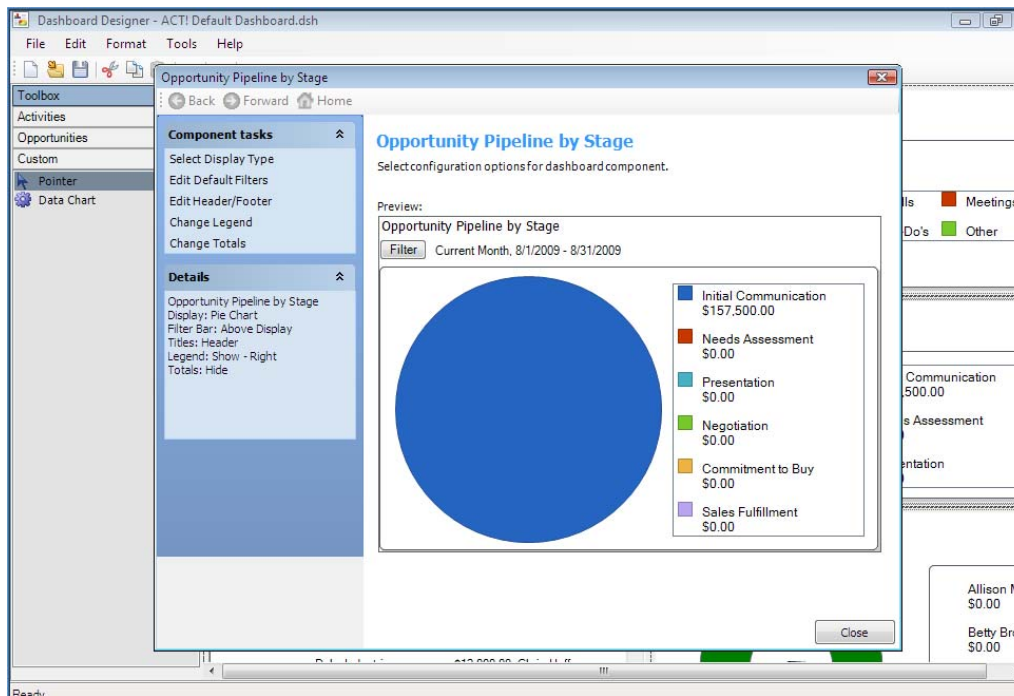


*Figure 11: The Dashboard Designer is flexible and customizable.*

11   In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

12  In order to add, edit, or remove Dashboard components, you must have a Sage ACT! manager or administrator security role.

## Database Access

Sage ACT! provides a number of ways to access the Sage ACT! database for integration or reporting, depending on needs and access method.

### Database Access via OLEDB Provider

Sage ACT! includes an OLEDB Provider, which enables read-only access to a set of database views representing all of the Sage ACT! data in a logical schema representation. You can use the Sage ACT! OLE DB Provider for Reporting 2.0 to integrate other applications with Sage ACT!, for example, to use Crystal Reports® to generate custom reports.

Naturally, security is maintained using the Sage ACT! OLE DB Provider for Reporting 2.0, which means that users can only see the data that they have the rights to see.
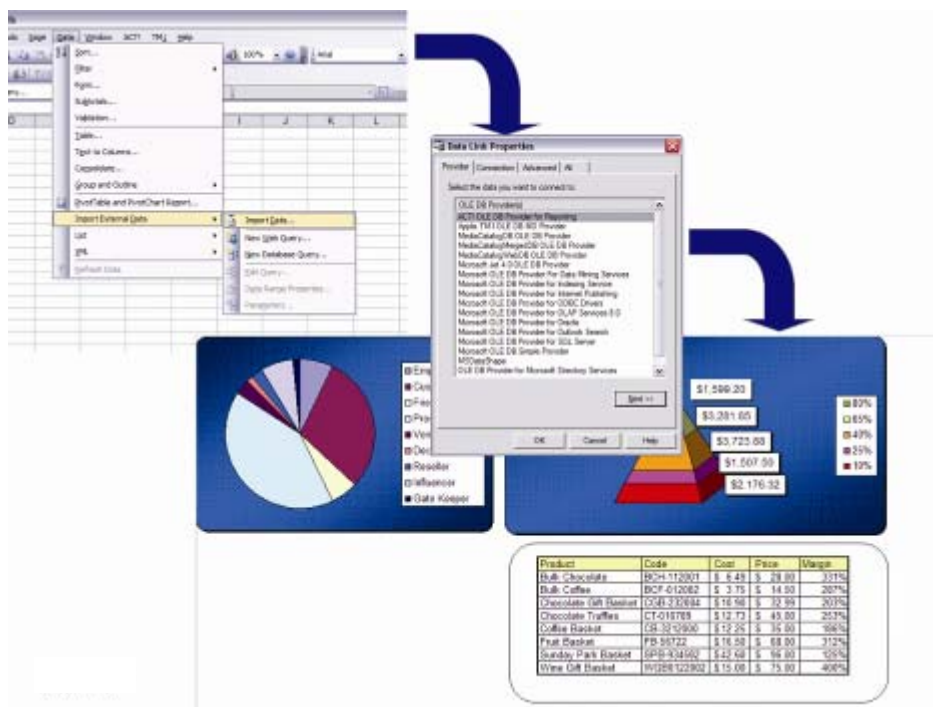


*Figure 12: This example shows how Sage ACT! accesses data from Excel using the Sage ACT! OLE DB Provider for Reporting 2.0*

### Reader Account

Sage ACT! provides a read-only SQL Server login to its database instance. The Reader Account allows direct, read-only access to information in the database, bypassing the security checks on access rights. This access method is supported in Sage ACT! Premium databases only and enables access to all Sage ACT! Premium databases on the machine.

**SA Password**

For those that need Administrator access to the Sage ACT! database for reporting and server-side backups, an SA Password utility can be used to reveal the SA password, reset it, and gain Administrator access to the database. Like the Reader Account, this method of access is supported in Sage ACT! Premium databases only and must be obtained through your regional Sage ACT! sales team.

## Integration

**Integration with Microsoft Office**

Sage ACT! provides many integration points with the Microsoft Office suite of products in order to leverage their capabilities. Integration with Microsoft Office is achieved in some cases by embedding the Object Models, such as exporting to Excel®, or by targeted application add-ons, such as the Sage ACT! add-on for Microsoft Outlook® that installs with Sage ACT! Pro and Sage ACT! Premium.
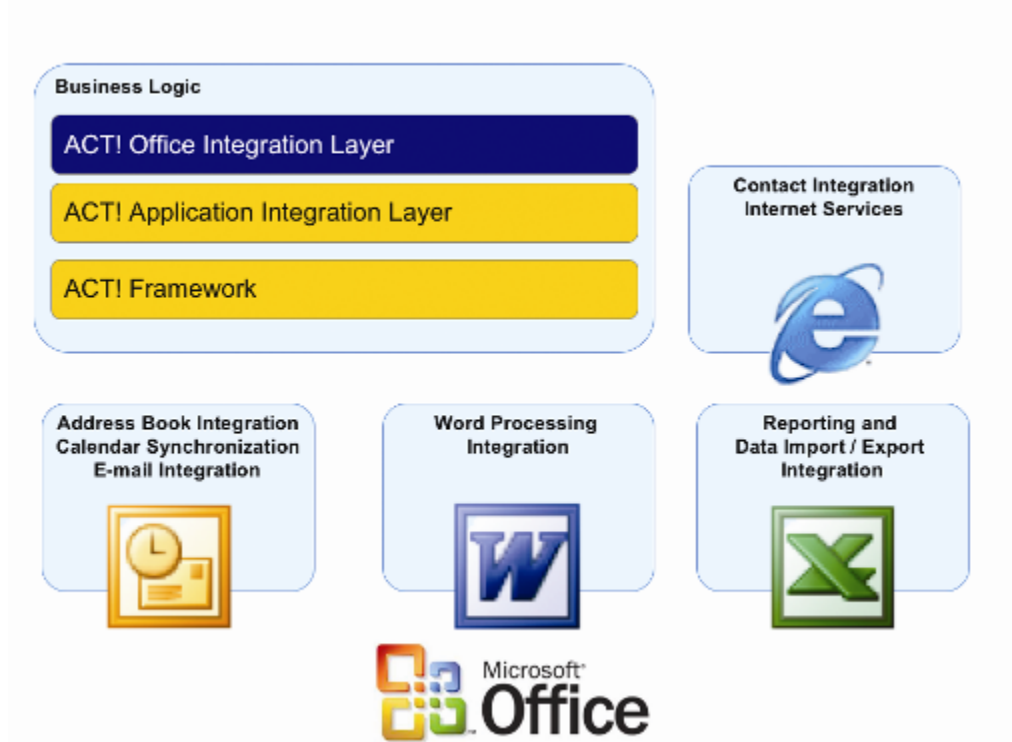


*Figure 13: Sage ACT! provides many integration points with Microsoft Office.*

**Integration with Microsoft Outlook**

Integration with Microsoft Outlook includes calendar, contact, and email integration.

**Calendar and Contact Integration**

With Sage ACT! Pro and Sage ACT! Premium, if users schedule some appointments and tasks in Sage ACT! and some in Outlook, they may find it helpful to view all calls, meetings, and to-dos on a single calendar in either application. Similarly, users may want to have some of their Sage ACT! contacts in Outlook.  Calendar and Contact synchronization lets users synchronize their Sage ACT! and Outlook data. Sage ACT! 2011 supports 2-way synchronization of both calendar activities and

contacts. No matter where the changes occur or where the data was created, calendar and contacts are up to date. Users can view Outlook activities on Sage ACT! calendars, in the Task List, and in the Activities tab.

Sage ACT! Pro and Sage ACT! Premium support sending calendar invitations in the iCalendar format, directly supported by Microsoft Outlook and Apple® iCal®, online calendaring applications such as Google Calendar™, Yahoo!® Calendar, and Windows Live™ Calendar, Lotus Notes®, and some social applications. Users can customize alarm settings and automatically creating Sage ACT! activities when accepting Outlook invitations for an enhanced Outlook and Sage ACT! integrated experience.

**Email Integration**

With integration with Outlook email, users can benefit from Outlook email capabilities while integrating with core components of Sage ACT!. There are four integration points:

1. Sending and receiving emails using the Sage ACT! email client – The Sage ACT! email client is an interface that sits in front of Outlook. Users send and view email in this interface, which provides additional functionality over Outlook and other forms of email integration. For example, users can create Sage ACT! activities from emails, quickly look up contacts from emails received, and attach emails to group or company records. The Sage ACT! email client is only available in Sage ACT! Pro and Sage ACT! Premium.

2. Using Outlook email while in Sage ACT! – Users may want to send email from within Sage ACT! using Outlook rather than the Sage ACT! email client. If this option is selected, everything from mail merge to clicking on hyperlinks will use Outlook email client.

3. Integrating address books – If users utilize Microsoft Outlook to send and receive email messages, they can add one or more Sage ACT! address books to the Outlook application. When a user writes a message, they can select Sage ACT! contacts to send it to, and record it to the contacts' history. Users can also attach received Outlook email messages to a contact's record.

4. Attaching email to Sage ACT! contacts – If users don't want to select a name from the address book, they can automatically attach emails to Sage ACT! contacts when sending a message. Attaching emails can be done en masse or on a case-by-case basis. The Outlook rule engine can also be used to set up a rule based on custom criteria to automatically attach emails to Sage ACT! contacts. The integration silently processes the matching of email addresses and recording of history to Sage ACT! contacts, outside of Outlook, so performance and workflow are not affected. Further, the integration between Sage ACT! and Outlook is designed to support Sage ACT! Pro, Sage ACT! Premium, and Sage ACT! Premium (access via web) products when any or all of the products are installed.
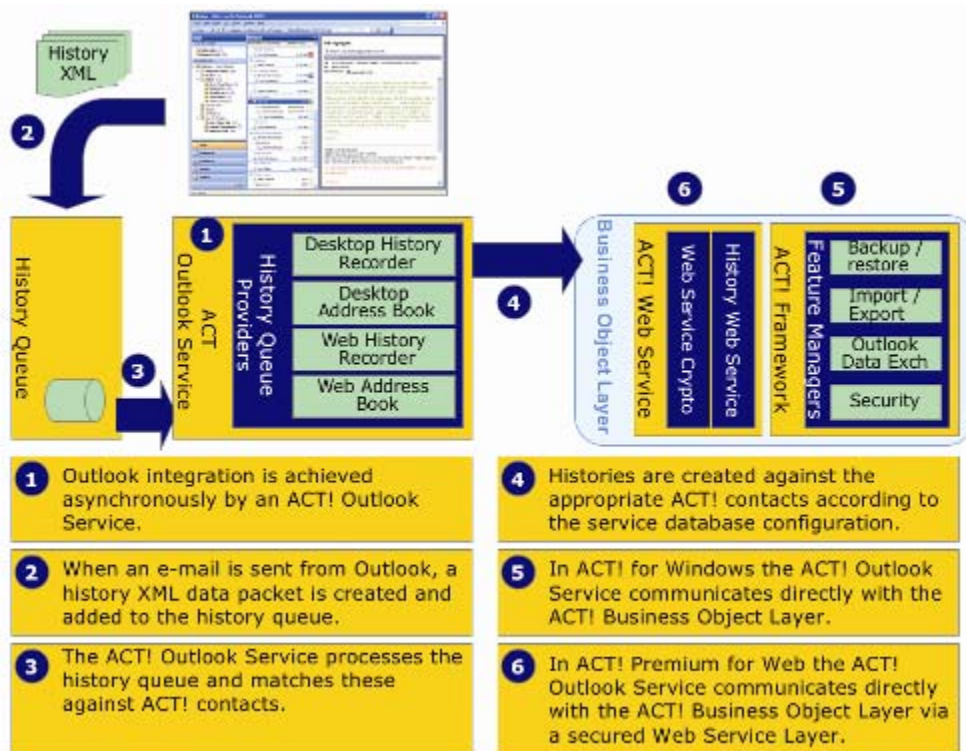
*Integration with Microsoft Outlook includes calendar, contact, and email integration.*

Figure 14: Users can benefit from Outlook email capabilities while integrating with the core components of Sage ACT!

**Integration with Outlook Contacts**

With Sage ACT! Pro and Sage ACT! Premium, users can import data from Outlook using the Import Wizard. Import is only available to Administrators and Managers. Outlook contacts import from a user's Contacts folder and any subfolders of that folder located on the user's computer. When importing information, like appointments, notes, or journal entries, users can map it to contacts imported from Outlook or to contacts in their Sage ACT! database.

Microsoft Exchange contacts will import from a Contacts folder, subfolders of a Contacts folder, and the Exchange Server's Public folders, including the Contacts folder stored on the network; however, users cannot import records from the Global Address List.

Further, when using Outlook as the email client, a user can create a contact in Sage ACT! by the simple click of a button[13]. Sage ACT! provides an Outlook add-in, which is installed with Sage ACT!. This add-in enables easy contact creation from the Outlook email client. Users can select the target Sage ACT! database "on-the-fly" and Sage ACT! will use duplicate checking settings for the selected database. Contacts that are created will adhere to the database preference for access of new contacts (private or public).

Lastly, Sage ACT! contacts can be exported to vCard format, which is supported directly by Outlook, Apple Address Book, many mobile device platforms including BlackBerry®, iPhone®, and Windows Mobile®, as well as Lotus Notes, and some social applications. Export functionality is restricted to certain user roles.

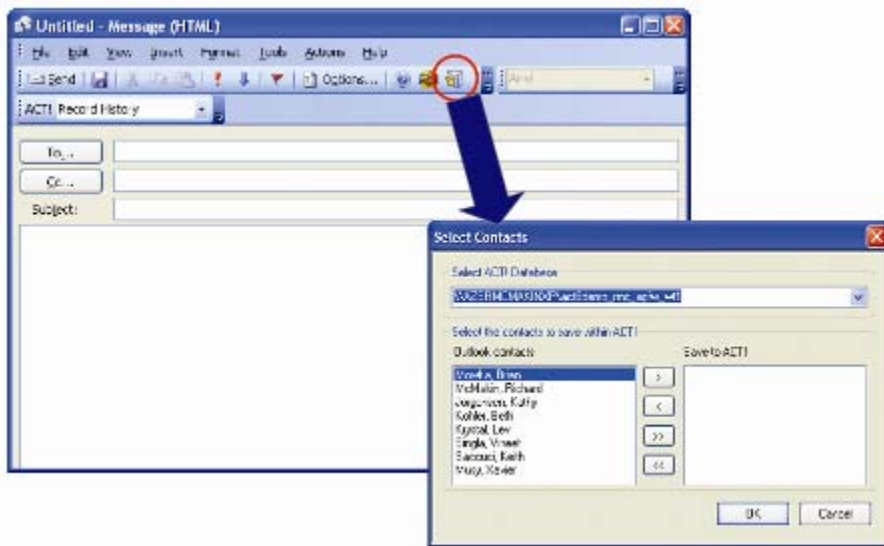13  This feature is not available in Sage ACT! Premium (access via web).

Figure 15: Users can create a contact from the Outlook Email Client.

### Integration with Microsoft Word

With Sage ACT! Pro and Sage ACT! Premium, users can specify Microsoft Word as the word processing tool for creating or modifying documents and templates. Sage ACT! Premium (access via web) users must install a component to use Word with the web client. Sage ACT! adds a menu to Word; from that menu a user can attach a document to a contact record, send a document in an email message or fax, and display the mail merge fields.

### Integration with Microsoft Excel

A user can export the Contact List, Group List, and Company List data to Microsoft Excel, if the appropriate version (Excel 2002, 2003, or 2007) of Excel is installed on the user's machine. It's also possible to export the Opportunity List data to Excel and display pivot table information and analysis automatically. And, before export to Excel, users can customize[14] the columns on the list views. Export to Excel is limited to certain user roles. In Sage ACT! Premium, a permission to export to Excel can be granted or removed. However, in Sage ACT!, this permission is granted by default and cannot be removed.

The columns and data shown on the Sage ACT! list view are retained in Excel. Further, Sage ACT! Pro and Sage ACT! Premium adds a menu to Excel, and from that menu a user can attach a spreadsheet to a contact record and even map contact, group, or company fields to Excel spreadsheets.

### Internet Services Integration

The Welcome Page provides direct links to Sage ACT! products, services, and support and other web pages. To use the Welcome Page, users need Internet access (for version compatibility, see Sage ACT! system requirements at www.act.com/2011systreq).

The Web Info tab offers links to several reference and research sites, such as LinkedIn®, Facebook, and Google Maps™ (the reference and research sites will vary according to your country).

14  In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

15  This feature is not available in Sage ACT! Premium (access via web).

Users can also attach a web page to a contact by opening the web page and clicking the Attach web page to Sage ACT! contact icon in the toolbar[15]. The details of the attached web page appear on the History tab for the selected contacts.

### Other Email Applications

Sage ACT! Pro and Sage ACT! Premium integrate with Lotus Notes®, Eudora®, and POP3 accounts, delivering all the benefits of Sage ACT! email, such as attaching inbound emails to contacts, creating new contacts and activities from the email sender, and creating contact history on the contact record when sending emails, while still using Lotus Notes.

### Accounting Integration

The Sage ACT! Accounting Framework provides the ability to integrate Sage ACT! Pro and Sage ACT! Premium with accounting applications. This integration provides a complete view of all customer interactions for inquiry handling and performing follow-up tasks, and it eliminates duplicate data entry.

Sage ACT! provides integration with a variety of Sage accounting products including:

| Product Language | Locale |
| --- | --- |
| Ciel | French/France |
| Classic Line | German (Germany, Austria, Switzerland) |
| HWP 2008 | German (Germany, Austria, Switzerland) |
| Office Line | German (Germany, Austria, Switzerland) |
| PC Kaufman | German (Germany, Austria, Switzerland) |
| GS Auftrag | German (Germany) |
| Winware | German (Germany) |
| Sage 30 (Winway Z) | Swiss (Switzerland) |
| Sage 200 | English/U.S., UK |
| Peachtree by Sage 2007, 2008, 2009, and 2010 | English/U.S.,UK |
| Sage BusinessVision | English/Canada |
| Sage BusinessWorks v6 or higher | English/U.S.,UK |
| Sage Instant Accounts | English/U.S.,UK |
| Sage Line 50 | English/U.S.,UK |
| Sage Line 100 | English/U.S.,UK |
| Sage Pastel, Sage MMS, Sage MAS 90/MAS 200 v4.1, v4.2, and v4.3 | English/U.S., South Africa |
| Simply Accounting by Sage Pro, Sage Pastel, Sage MMS | English/CanadaEnglish/U.S.,UKEnglish/U.S.,UK |
| Simply Accounting by Sage PremiumSimply Accounting by Sage ProSage Pastel | English/CanadaEnglish//U.S.,UK |
| Simply Accounting by Sage Accountants' EditionSimply Accounting by Sage PremiumSimply Accounting by Sage Pro | English/CanadaEnglish//Canada |
| Simply Accounting by Sage Accountants' Edition, Simply Accounting by Sage Premium | English/CanadaEnglish/Canada |

| Simply Accounting by Sage Accountants' Edition | English/Canada |
|---|---|
| TAS | English/UK |
| MYOB | English/Australia |
| Sage Symfonia | Polish/Poland |

In addition, Sage ACT! provides integration with QuickBooks® Professional and QuickBooks Premier editions 2007 and 2008.

## Smart Tasks and Workflow

Smart Tasks, or workflow, enables Sage ACT! users to automate a series of steps that accomplish some purpose according to a set of rules or customization, such as marketing and sales activites. Users can create new workflows and change the order of these steps with a graphical flow, and can customize the steps to meet their needs.

Smart Tasks are built on top of Microsoft Windows Workflow Foundation, a technology leveraged by CRM products in the industry, including Sage SalesLogix.  This technology supports not only Sage ACT! Smart Tasks and custom steps, but it enables Microsoft Visual Studio® created workflow activities to be run in Sage ACT!, as part of a Smart Task custom step.  That means complex, enterprise, and company-specific workflows can be developed by partners for specialized and tailored solutions.

## Deployment

Sage ACT! allows you to configure the solution based on your organization's needs, whether they include online access, offline access, web access, handheld mobile access, or a combination of access methods. Since the Sage ACT! architecture allows maximum flexibility, with compatible databases between Sage ACT! Premium and Sage ACT! Premium (access via web), the key to a successful Sage ACT! deployment is to provide the optimum access method(s) corresponding to the user needs in the organization.

### Deploying Sage ACT! with a Local Database

Sage ACT! can be deployed as a desktop application with a local database. Businesses often use this deployment approach when they want to provide Sage ACT! as a sales productivity tool with maximum user flexibility, data ownership, and access to contact information. In this deployment scenario, each user maintains a local database on his or her desktop PC or laptop and does not share or otherwise co-mingle data with any other user's data. In this scenario, the user has complete control over the Sage ACT! application settings and his or her own database.

A variation on this approach is to install Sage ACT! on end-user machines, but apply a corporate-defined database schema (fields, layouts, etc.). In this approach, the Sage ACT! end-user does not receive administrative rights to the database, which prevents the end-user from customizing the solution, compelling him or her to use corporate-defined databases, fields, and layouts. If changes defined by the corporation need to be made, an individual with administrative rights can make those changes and create a copy for users to deploy on their desktops or laptop PCs.

In both cases, the instance of Sage ACT! is installed on a local machine that connects to a local instance of Microsoft SQL Server Express (which is bundled with Sage ACT!) to maintain local databases (whether corporate-controlled or not).

*The key to a successful Sage ACT! deployment is to provide the optimum access method(s) corresponding ot he user needs in the organization.*
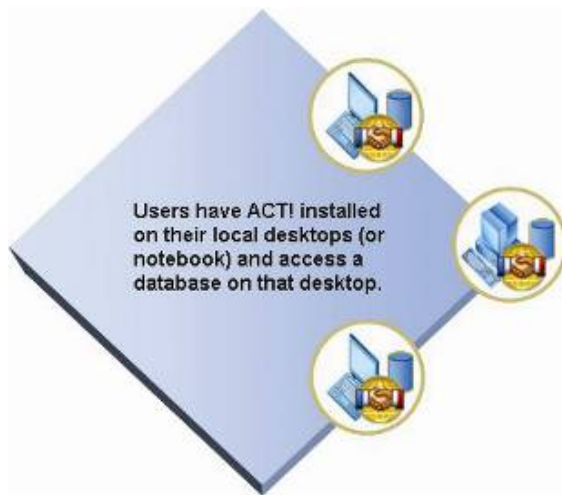
*Figure 16: This illustration depicts how Sage ACT! is deployed on individual users' desktops when each utilizes a local database.*

**Deploying Sage ACT! Premium with a Shared Database**

For organizations that want to support a team of users and maintain data and database control, Sage ACT! Premium can be deployed to each user's PC and provide network access to a centrally shared database. This approach provides complete sharing with greater administrator control, since users are not managing local databases, and allows the database to be centrally deployed and managed while providing all users with real-time data access. This deployment scenario is useful for companies who wish to share data among users, require a high-level management view of the information, and retain control of the Sage ACT! database.

For users that need offline access, that is, when they are not connected to the network, local databases can be installed on each user machine to allow synchronization with a centralized database. Sage ACT! Premium allows full synchronization to a centralized database, using the Sage ACT! Network Sync Server (provided with Sage ACT! Premium). The Sage ACT! HTTP Sync Server (provided with Sage ACT! Premium) can be deployed if users need to sync data across the Internet without a Virtual Private Network (VPN)--for example, when working from home.

Optionally, when sharing a central database, users have the ability to skip the installation of the local database, for faster and easier deployment.

Sage ACT! Premium allows deployment of multiple Network Sync Servers and HTTP Sync Servers, so traffic can be load-balanced in accordance with organization and user needs. These Sync Servers can be deployed on any machine on the network to optimize deployment flexibility and reduce costs.
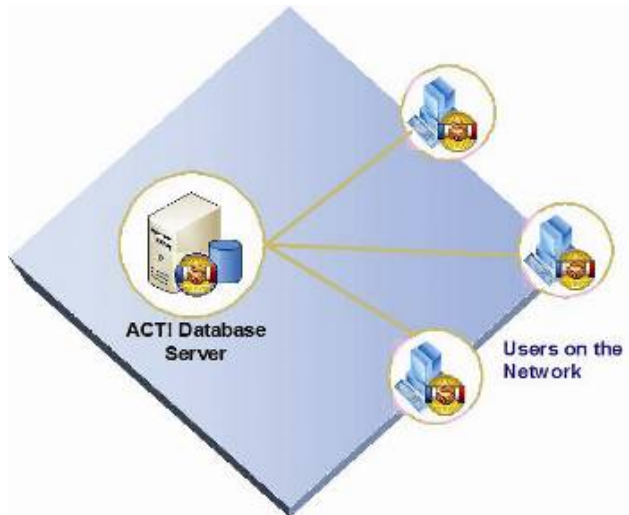
*Figure 17: Sage ACT! Premium can be deployed to each PC with network access to a central database.*

**Deploying Sage ACT! Premium (access via web) in a Corporate LAN**

Often, in a larger workgroup or a corporate environment, management or IT may choose the flexibility, security, and fast roll-out of a web-based solution. In this deployment scenario, Sage ACT! Premium (access via web) and the database are installed on centrally managed servers. Users connect to the Sage ACT! Premium database via Internet Explorer to provide immediate access to Sage ACT! data across a network. This method makes end-user setup straightforward, since there is no installation and configuration of software needed on the end-user's desktop. Users that need Microsoft Outlook email integration with Sage ACT! Premium (access via web) simply install a plug-in from the Preference dialog box.

When deploying Sage ACT! Premium (access via web) for 30 users or less, with constraints on hardware and server availability, Sage ACT! Premium (access via web) and Microsoft SQL Server® can be deployed on the same server. If access is provided to the web server through the firewall, access to Sage ACT! Premium (access via web) will be available from any PC that has Internet access and Internet Explorer installed.
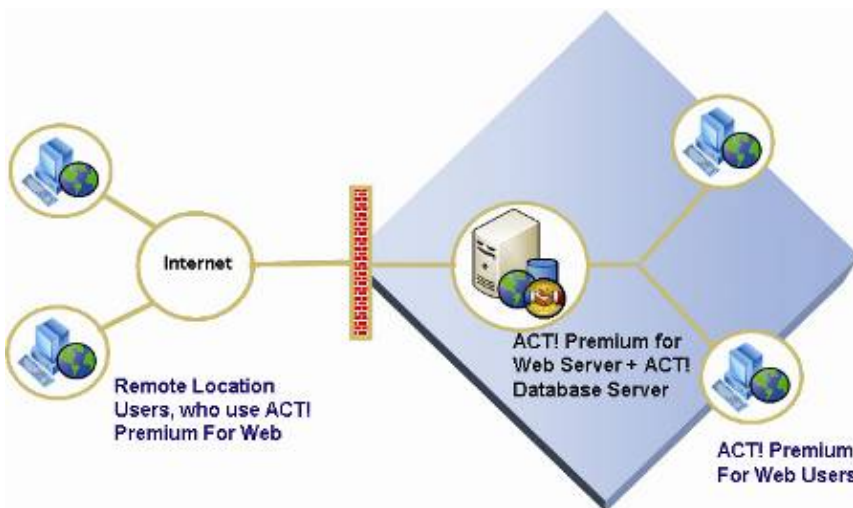


*Figure 18: Sage ACT! Premium (access via web) can be deployed using a single server.*A second option is

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Architecture, Customization, and Integration

to deploy the Sage ACT! Premium database and Sage ACT! Premium (access via web) on separate servers. This provides increased performance and security. Multiple application servers running Sage ACT! Premium (access via web) can be used to extend scalability[16] with all of the servers connecting to a common database server. With this deployment:

- Microsoft SQL Server (bundled with Sage ACT! Premium (access via web)) is installed and configured on a dedicated server.
- Sage ACT! Premium (access via web) is installed on one or more application servers to accommodate the needed number of users.

The benefit of the Sage ACT! Premium (access via web) solution is that IT has full control of the solution deployment, setup, and database. This greatly speeds and simplifies roll-outs, improves reliability, and enables users to be quickly added or deleted, while providing complete data security. With Sage ACT! Premium (access via web), database administration and control is completely in the hands of experienced and authorized personnel. Users simply connect to the database using their browser.
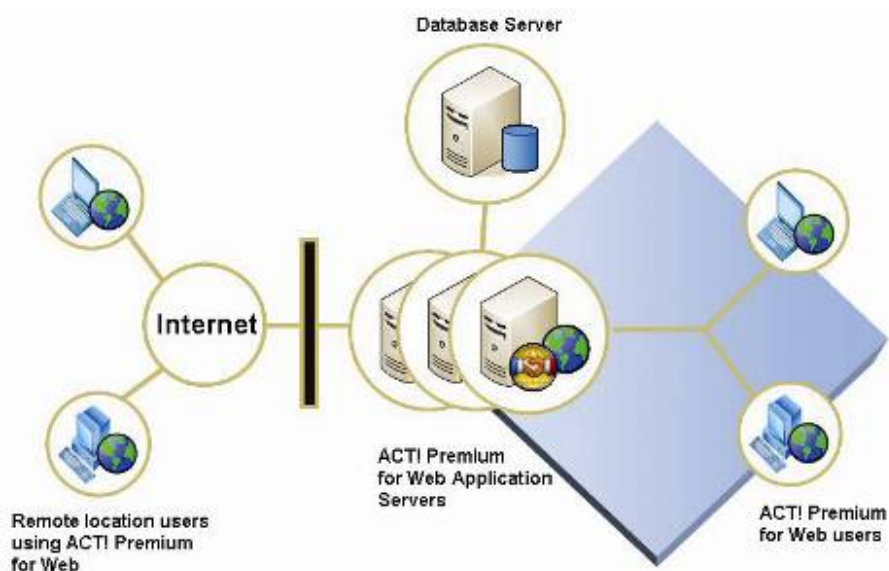


*Figure 19: This illustrates Sage ACT! Premium (access via web) in a Multi-Server Deployment*

### Mixed Deployments

To support a varying set of user needs (including connected, disconnected, and offline access) and maintain maximum flexibility, organizations can deploy Sage ACT! Premium and Sage ACT! Premium (access via web) in a mixed desktop and web environment. Mixed scenarios provide instant anywhere, anytime access through Sage ACT! Premium (access via web), while allowing disconnected/offline access using Sage ACT! Premium for users who need this functionality. Furthermore, in this deployment, both Sage ACT! Premium and Sage ACT! Premium (access via web) users share a common database and customizations[17] to layouts, reports, and fields, enabling IT to administer and customize one environment and allowing users to choose their access method.

A mixed environment allows Sage ACT! Premium and Sage ACT! Premium (access via web) users to share a database, while maintaining compatibility with Sync Servers to support the disconnected deployment model where remote databases are synchronized with the master database.

16  In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

17  In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.
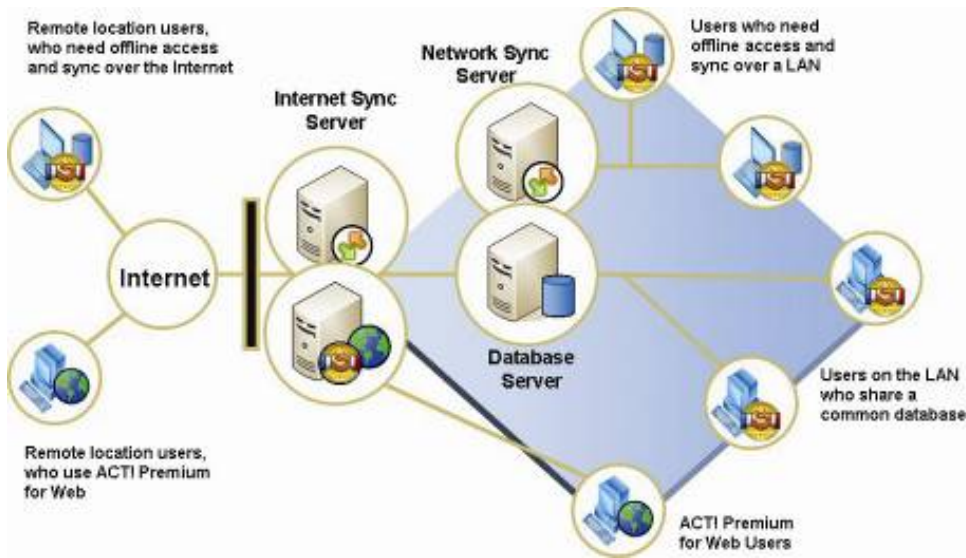
*Figure 20: This illustrates Sage ACT! Premium / Sage ACT! Premium (access via web) in a Mixed Deployment*

## Silent Install[18]

Administrators can set up the Sage ACT! Premium application to install on client machines without intervention. When the Administrator installs the ACT! application, he or she uses a command line that records the installation information as pre-recorded answer files so that it can be used for subsequent installations on client machines. This includes setting key preferences and serial number activation. The Administrator also can modify the error message that users will see if a problem occurs with the install. The silent install process works with both Sage ACT! Premium and ACT! Sage Premium (access via web).



18 Delivered as an MSI package. Software to distribute an MSI package is not included. Silent Activation on machines requires Internet access. Users must be machine administrators in order to activate. See ACT! Help for more detail.
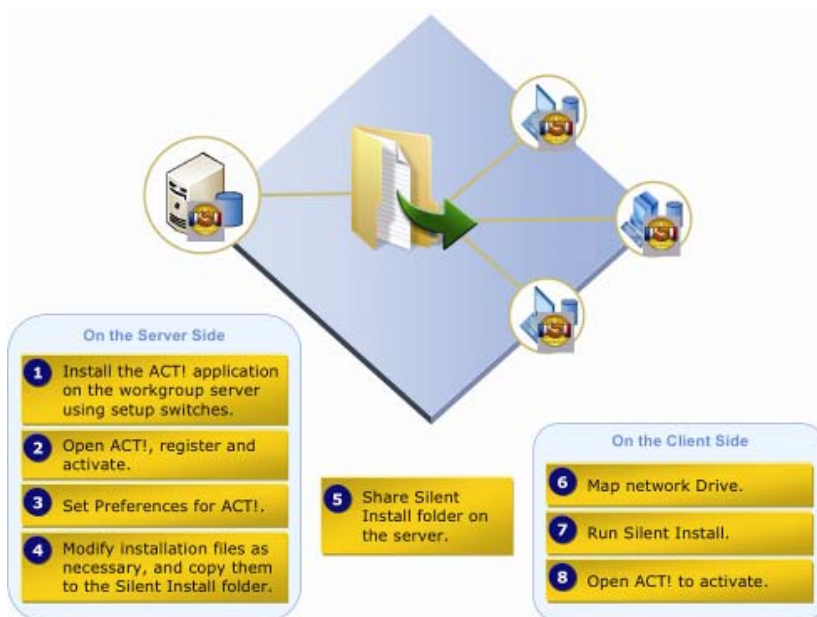
*Figure 21: Silent Install can be used to install Sage ACT! Premium on client machines without intervention.*

Architecture, Customization, and Integration

**Auto Update**

The Sage ACT! product line supports an auto-update feature known as Sage ACT! Update. This enables automatic notification and optional downloading of the latest product updates. Customers are notified of a product update and can choose to download and install the update. This update technology uses Web Services via the HTTP protocol, and as such, is safe through normal firewall settings.

Some IT administrators prefer to control the update process in their environment. For these administrators, Sage ACT! offers the option to disable the Sage ACT! Update feature in the user preferences.

## Scalability[19]

The Sage ACT! platform was built with scalability in mind. The Sage ACT! Framework follows a disconnected model for database access and connectivity. This means that Sage ACT! only connects to the database as needed to retrieve or update data and doesn't retain server-side cursors. (Note: a cursor is the resulting set of records returned by an SQL Server query.) This is a best-practice approach to scalability, which aids in supporting a high number of connected users and limits resources needed on the database, the database server, and the network in general. This also facilitates Sage ACT! Premium (access via web), particularly when load balancing the back end by hosting the database on a server other than the web server.

Sage ACT! lists such as contacts, groups, companies, notes, history, opportunities, etc., are all built on the Smart Lists foundation. These are designed to scale in the number of records returned to the Application tier, so that, as the magnitude of records in the system increases, performance degradation is minimal. Specifically, these entity lists are based on the Smart Lists technology, which features:

- Collection Management: Smart Lists mediate data access, handling all data source interactions and returning a collection of high-level objects that the application can manage and manipulate.
- Predictive Data Fetching: The Smart Lists pre-fetch data in the region of the window that is currently being viewed, based on scrolling and user interaction.
- Cache Management: Smart Lists will manage the "staleness" of information in the list using advanced heuristical and deterministic algorithms.

These techniques minimize:

- Time to fetch and view data
- Memory consumption
- Round-trip chatter and lag

This generally optimizes a real-time scrollable experience, with transparent faults and data fetching. As a result, the Sage ACT! platform supports a high volume of entity records with little performance degradation.

*Sage ACT! only connects to the database as needed to retrieve or update data and doesn't retain server-side cursors.*

19 Scalability will vary based on hardware and size and usage of your database. Published minimum system requirements found at www.act.com/2011systreq are based on single user environments. You must purchase one license of Sage ACT! per user.
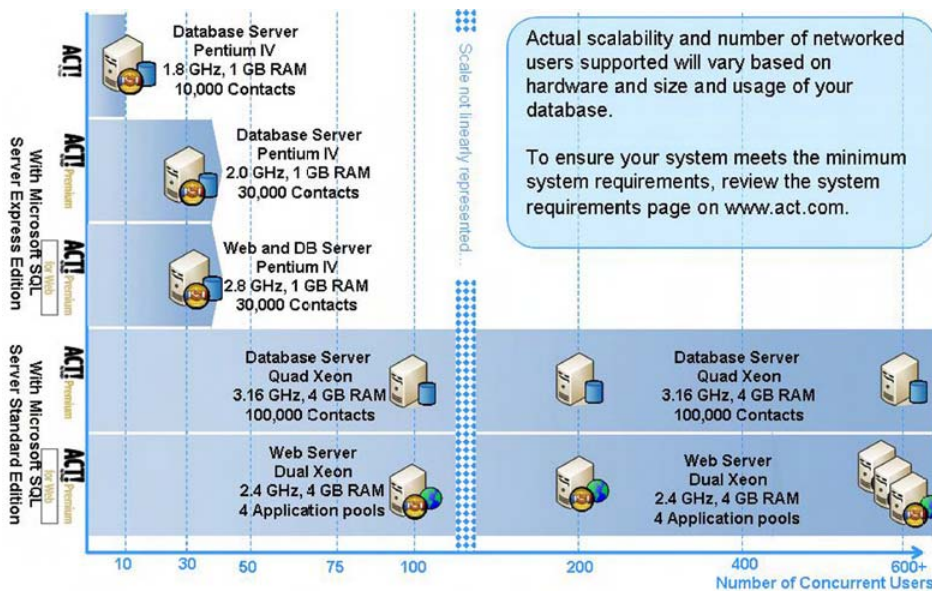
*Figure 22: The Sage ACT! platform was built with scalability in mind.*

## Synchronization

### Database Synchronization

With Sage ACT!, users can share data by using a common, or main, database to maintain contact, group, and company information. This is especially helpful when users in different locations share data. Sage ACT! synchronization tracks changes to data in multiple places and transports the change from one database to another.

A remote location requires a remote database of the contact, group, and company information contained in the main database. A remote database can have all of the data or just a subset of the data in the main database. You synchronize data between a main database and one or more remote databases. You can also create up to 50 remote databases at one time.

Synchronization requires a connection between the main database and remote databases. Sage ACT! synchronization has been designed as a background process that allows normal use of the database during synchronization. Remote database users can use the Sage ACT! Scheduler to automate database synchronization.

1. Unified architecture for both Desktop and Handheld Devices
2. Based on SyncML 1.1 (open standard)
3. Publisher/subscriber model
4. Supports LAN & HTTP sync
5. Dependable and efficient transaction logging
6. Recoverable
7. Includes:
   - Full database column-level changes
   - Schema and configuration changes
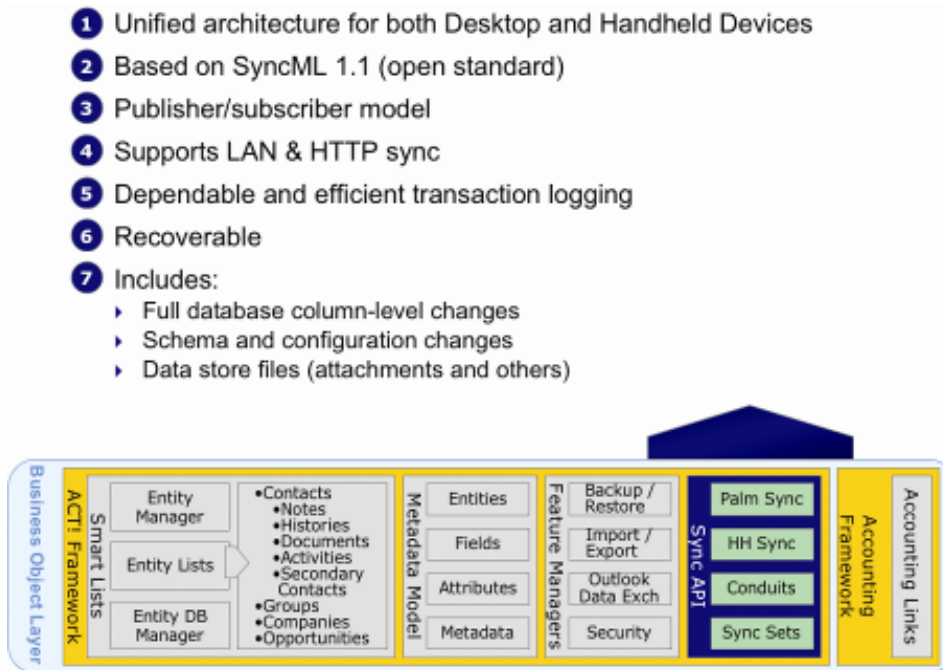   - Data store files (attachments and others)

*Figure 23: Sage ACT! synchronization tracks changes to data in multiple places and transports the change from one database to another.*

## Sage ACT! Scheduler

Available to the Sage ACT! product family, the Sage ACT! Scheduler feature lets users schedule up to two automated tasks:

- Database backup[20]
- Database maintenance[21]
- Database synchronization for remote databases
- Outlook Activity Synchronization

Users can create, edit, and delete tasks, view the task logs containing information about the execution of the tasks, and stop and start the service.

Most scheduled tasks are triggered and run as long as the PC is turned on. The only exception is the Outlook Activity Synchronization, which, due to a limitation in the Outlook object model, requires the user to be logged in to Windows. All scheduled tasks will be triggered and run whether or not Sage ACT! or Outlook is currently running.

20 In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

21 In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.
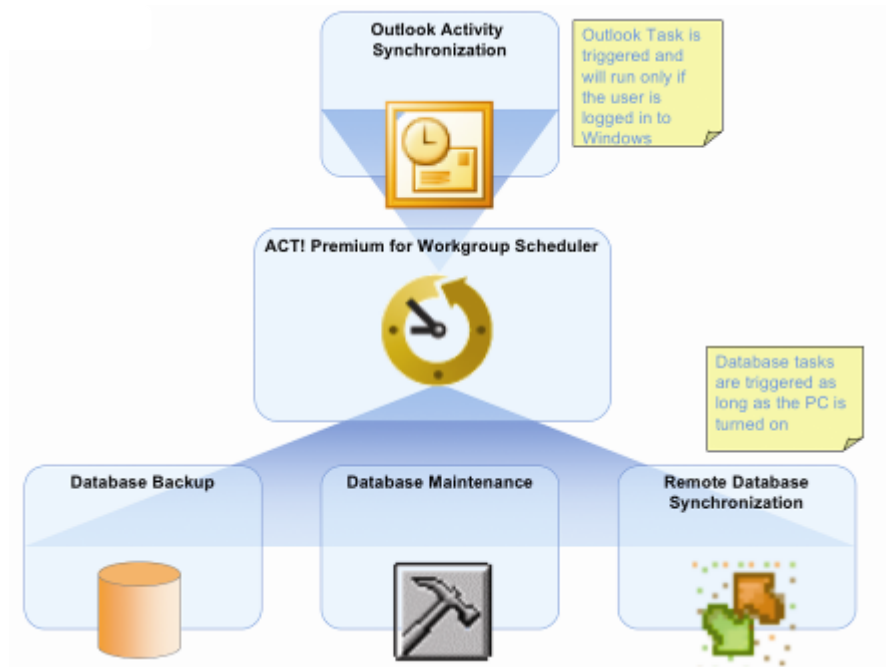
*Figure 24: Sage ACT! Premium Scheduler lets users schedule up to two automated tasks.*

## Security

This section provides an overview of the Sage ACT! security model and is based on functionality available in Sage ACT! Premium. The Sage ACT! security model is designed to maximize flexibility and provide a variety of options for securing data. Managers and Administrators (in larger organizations the Administrator may work in the IT organization) can leverage Sage ACT! security features to limit access to the database, records within the database, and fields related to those records. The entire Sage ACT! product family uses the same Sage ACT! security model, ensuring consistent data protection.

### Sage ACT! Security Overview

The Sage ACT! security model supports both stand-alone and workgroup implementations. Security in Sage ACT! can be scaled to suit your environment, whether you work alone, with a small team, or with a large workgroup[22]. Security can be enforced at the database level, the feature level, the record level, and the field level.

### Five User Roles

#### Administrator
Administrator is the highest level role in Sage ACT!. Users with this role can access all features in Sage ACT! and all records that have public or limited access. Only private data owned by other users is inaccessible to the Administrator. (For more information about record access, see the Sage ACT! Security white paper.) The Administrator is the only role allowed to Manage Users, Delete a database, and set the Password Policy. Users who are responsible for maintaining the database and who need to access most features and data should be Administrators.

**Manager**

Managers have access to all features except Manage Users, Delete database, and Password Policy. The Manager role can be tailored for individual needs by granting or withholding four custom permissions. Managers have access to all public records. Users who need to Manage Teams, modify database schema, manage records owned by other users, create/edit layouts, import/export data, manage custom activity types, or update product information, should be Managers.

**Standard**

The Standard role represents the typical user. Users with this role can access most areas of the application, create/edit any record to which they have access, and delete records that they own. Standard users can access only public records and their private records. The Standard role can be tailored for individual needs by granting or withholding six custom permissions. Users who perform a variety of tasks, including creating/modifying word processing and report templates, but who do not need to modify or maintain the database, should be Standard users.

**Restricted**

Restricted users can access only basic functionality. Users with this role can create/ edit contacts, activities, notes, history, and opportunities, but cannot create or edit groups or companies. Restricted users can run reports and write letters using existing templates, but they cannot modify letter or report templates. Restricted users can only access public records and their private records. In addition, users with this role cannot delete any records, even records they own. Typically, Restricted users are assistants, hourly workers, or others requiring only limited access to features in Sage ACT!.

**Browse**

The browse role gives users read-only access to information in the Sage ACT! database. Browse users can perform lookups, run reports, and print information, but cannot create or modify any data in the Sage ACT! database. Temporary employees and users who only need to reference information should be Browse users.

## Types of Security in Sage ACT!

**Database Security**

Database security controls who can use a database. Individuals access a Sage ACT! database using a unique user name. The Sage ACT! database Administrator also can implement a password policy to further restrict database access.

**Feature Security**

Feature security controls who can use specific features. Each Sage ACT! database user is assigned a role. Each role dictates which features (permissions) a user can access in the application. ACT also offers custom permissions which can be granted to or withheld from a user.

**Record Security**

Record security controls who can see data and what data they can see. Every record in Sage ACT! has an owner known as a "record manager." When a record is marked private, only the record manager can view it. Sage ACT! users can access all public data, their private data, and any limited access records to which they have specifically been granted access. Administrators can access all records except private records owned by other users. A user must have access to a parent record (contact, company, or group) in order to access any extended data (notes, history, activities, opportunities, or secondary contacts) belonging to that parent record.

**Field-Level Security**

Field-level security controls who can see and modify fields and what fields they can view and modify. Users who are assigned Administrator or Manager roles in Sage ACT! can secure fields, so that the information is available only to specific users and/or teams of users. Administrators or Managers can give "full access," "read only access," or "no access" to fields on a user-by-user basis. A field can be given a Default Permission that applies to all users. Some core fields and system fields cannot be secured because they are required for basic Sage ACT! functionality. Please see the Sage ACT! Security white paper for additional information on security.
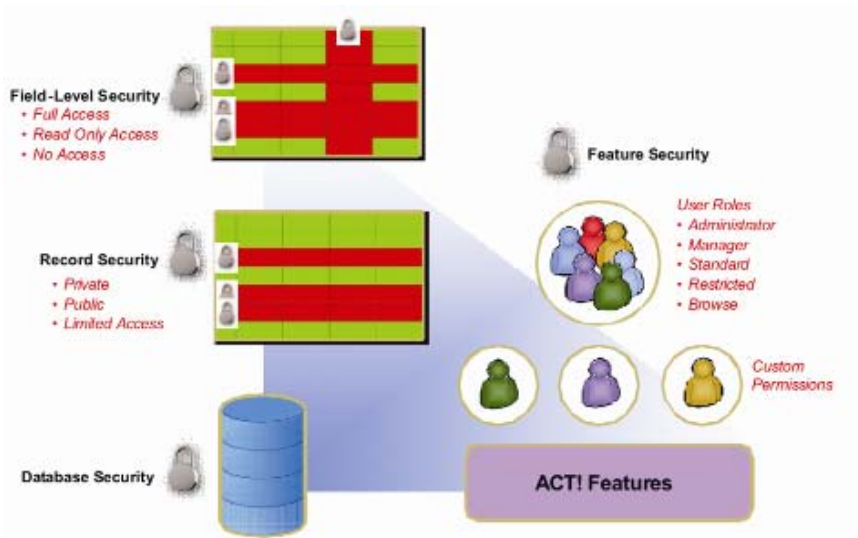


*Figure 25: The Sage ACT! Security Model was designed with multiple levels of security features.*

## Extensibility Model

The Sage ACT! platform is not just a foundation for all Sage ACT! product lines, but also a platform for third-party development to extend, integrate with, and connect to Sage ACT!.

The Sage ACT! Framework is available as part of the Sage ACT! SDK. This gives third parties the same first-class availability of the Sage ACT! platform.

The Sage ACT! product line follows a multi-tier architecture and each tier in the Sage ACT! architecture has one or more unique extensibility points with their own particular capabilities. Sage ACT! custom solution development involves knowing and choosing the right extensibility path(s), understanding each tier, its capabilities and extensibility, and matching the problem domain with the appropriate extensibility point(s).

### Accessing Sage ACT! Business Objects from an External Application

The Sage ACT! Framework can be consumed when integration is needed from outside the realm of Sage ACT! and when no interaction with the application or user interface is needed. Applications and Windows services can consume the framework to access data, automate functionality, and provide back-end services. web applications and web services can consume the framework to provide clients or back-end solutions across network boundaries.

Accessing Sage ACT! data from an external application is made very simple by the implementation of .NET interfaces "ITypedList" and "IBindingList" which make it simple to bind collections to UI controls.

*The Sage ACT! platform can be used by third-party development to extend, integrate with, and connect to Sage ACT!.*

For example, retrieving a list of contacts from Sage ACT! and populating a .NET ComboBox with the FullName of the contacts can be achieved with five lines of code.

```
ActFramework framework = new ActFramework();
framework.LogOn("ACT_user_name", "password", "server_host", "database_name");
// get all contacts in the database
ContactList contacts = framework.Contacts.GetContacts(null);

// note that since ContactList implements ITypedList and IBindingList,
// then it can be used as a datasource for any databound control in .net
this.comboBox1.DataSource = contacts;
this.comboBox1.DisplayMember = "FullName";
```

*Figure 26: This is an example of accessing Sage ACT! data from an external application.*

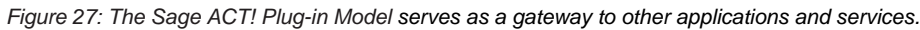### Extending the Sage ACT! Application

The Sage ACT! application has several extensibility points: plug-ins, custom controls, and custom tabs. Each can be used independently to provide new functionality or they can be used together to provide larger solutions.

### Plug-ins

Plug-ins enable third parties to behaviorally and/or visually extend the application. Plug-ins can also serve as gateways to other applications or services which need live interaction with the application. Plug-ins, like in other applications, are passed a reference when the Sage ACT! application is loaded and can access all of the application (and framework). Typically, plug-ins will subscribe and react to events in the application and framework to perform some specialized functionality. The entire Sage ACT! product family supports plug-ins.

Custom tabs can also be added to provide new ways to view data in detail views of the application. You can use this option to organize your domain-specific fields, whether custom fields or predefined fields, in an easy-to-find location.

Over 70 third-party add-on products extend the capability of Sage ACT!. A listing of add-on products is available on the Sage ACT! web site: http://www.act.com/partners/addonpartners/index.cfm.

*Figure 27: The Sage ACT! Plug-in Model serves as a gateway to other applications and services.*

### Custom Controls

Custom controls can provide visual extensions to the application's designable views, namely, contact, group, and company detail views, and can support rich, design-time behavior and integration with the layout designer. For example, you can create a custom control displaying contact-related database records contained in an external application within a grid in a Sage ACT! layout. The entire Sage ACT! product family supports custom controls. This means Sage ACT! Premium (access via web) can support rendering a Sage ACT! custom control.



*Figure 28: Here is a look at a sample custom control: Display structured data in a contact layout.*

## Custom Dashboard Components

Custom Dashboard Components[23] can provide visual extensions to the Sage ACT! Dashboard and can support rich, design-time behavior and integration with the Dashboard Designer. Creating a Dashboard Custom Component is very similar to creating a layout custom control. The only significant difference is how the control is marked (Mark Custom Dashboard Component). Sage ACT! provides a base custom Dashboard component, so your custom component looks and feels like a native Sage ACT! Dashboard component. Much like other extensibility areas, the entire Sage ACT! product family supports custom dashboard components, so Sage ACT! Premium (access via web) supports rendering Sage ACT! custom dashboard components. The base component "Act.Framework.ComponentModel.Core.Dashboard.BaseComponent" provides common look and feel for:

- Header, Footer
- Custom Filtering
- ActFramework context
- Key events
- Connected
- Display



*Figure 29: A Base Custom Dashboard Component can provide visual extensions to the Dashboard.*

## Composite Application Support

Sage ACT! has composite application support, which enables third-party applications to leverage some Sage ACT! User Interface elements without needing Sage ACT! to be running, for integration purposed.  For example, a system may want to launch the Sage ACT! schedule activity dialog for a user to schedule a Sage ACT! activity, or create a Sage ACT! contact in a Sage ACT! database.

23 In Sage ACT! Premium (access via web), administrative functions must be performed on the web server.

## Conclusion

Sage ACT! is built on a feature-rich and customizable contact management platform, with focus on scalability, reliability, and extensibility. The Sage ACT! architecture allows you to tailor the product to your business via custom fields, layouts, reports, and a host of other in-product customizations.

Varied product choice and deployment options enable you to securely deliver Sage ACT! to your organization with the optimal blend of features and flexibility. Whether you choose to customize ACT! to deliver a Contact Management System optimized for your line of business, or whether you chose to integrate with products as offered "out-of-the-box" or to develop your own integration strategy, ACT! allows you full control and flexibility.

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**About Sage ACT!**
Sage ACT! makes it easy for you to have meaningful conversations with customers by giving you an organized view of the people you do business with. Like the millions of small businesses and sales teams who use Sage ACT!, you'll always be prepared with recent emails, meeting notes, task reminders, and social media profiles, because all of these details live in one place.

**Important Note:** Review Sage ACT! system requirements at www.act.com/2011systreq. You must purchase one license of Sage ACT! per user. Scalability varies based on hardware, size, and usage of your database. **Compatibility:** Visit www.actsolutions.com or contact your add-on product provider to help determine compatibility.

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