Act! Architecture

Understanding Act! Architecture, Customization, and Security

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Introduction

This whitepaper is written for IT managers or system administrators who want a better technical understanding of the following components of Act!:

- Act! Architecture
- Customization
- Security

The Act! Architecture

Act! enables an organization to configure a contact and customer management solution based on the organization's needs, whether users require online access, offline access, mobile access, or a combination of access types. The architecture is founded on a feature-rich and customizable contact management platform, with a focus on scalability, reliability, and extensibility.

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Overview

The Act! Premium architecture consists of the following layered tiers:

- **Data Layer** – data storage and integrity.
- **Business Logic Layer** – business rules, core data access and manipulation.
- **Presentation Layer** – user interface portal to all functionality.

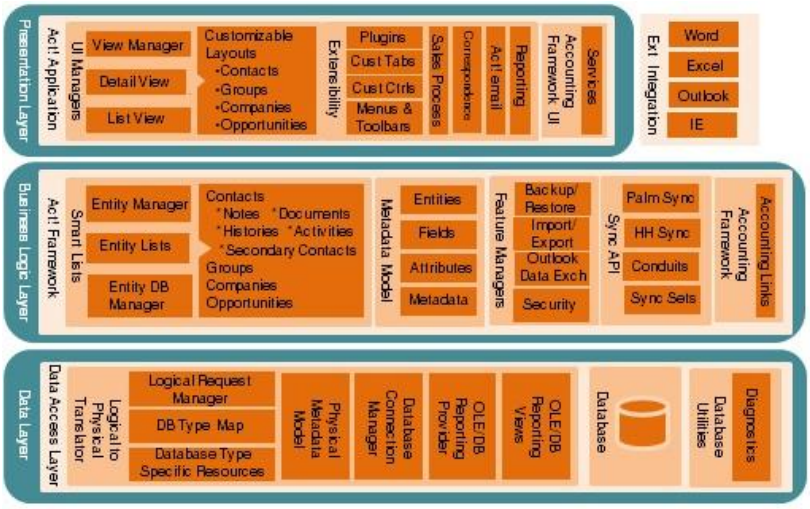

Figure 1: Act! Premium architecture overview

Data Layer

Act! leverages a full Relational Database Management System (RDBMS) at the back-end to support scalability and stability. As a result, the Act! database does not suffer from multiple user limitations or related database corruption issues traditionally associated with a flat-file database system. Act! uses Microsoft® SQL Server® as a database platform.

The 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.

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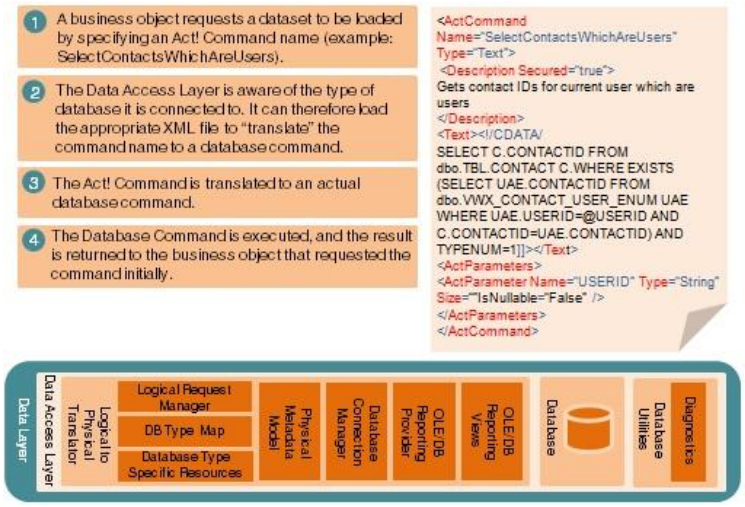

Figure 2: Example showing the use of the data access layer

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 Act! functionality, logic, rules, and access to business entities are encapsulated in the 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 Act!

[1] Scalability will vary based on hardware and size and usage of your database.

Framework is the Business Logic layer for the Act! platform and a crucial component of the Act! SDK.

The Act! Framework was designed using the principles of object-oriented design. This allows for complex base infrastructure components to be created, which benefit several features of the product.

High-level entities in 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 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:** 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.

[2] Scalability will vary based on hardware and size and usage of your database

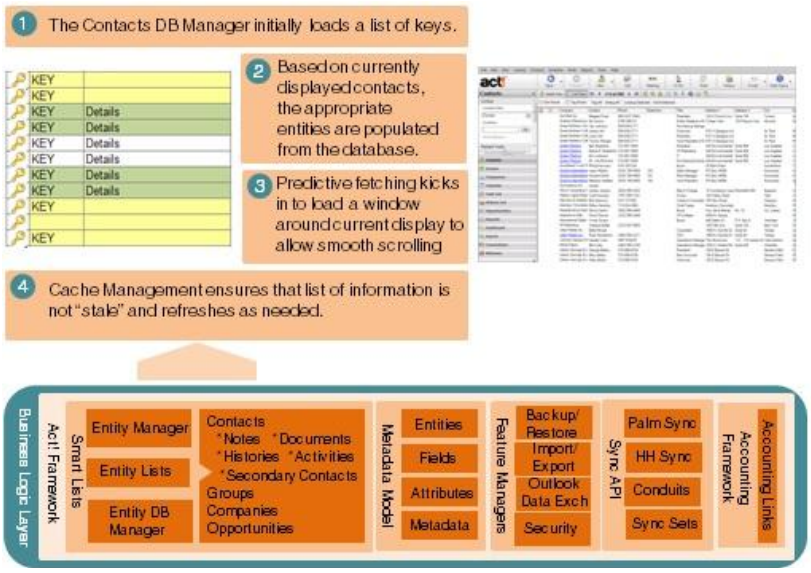

Figure 3: Example showing the use of the business logic layer – smart lists

Presentation Layer

The Act! platform contains a familiar presentation layer across the Act! product tiers to provide rich client capabilities for the end user.

Act! lets you fully customize the database fields according to your needs. It offers enhanced viewing of data by customizing layouts and reports, as well as many other customizations, data manipulation, and filtering.

Furthermore, Act! supports extending the presentation layer via custom functionality by third-party add-ons, custom controls, and custom tabs. Act! also provides 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 Act!.

Act! lets you fully customize the database fields according to your needs.

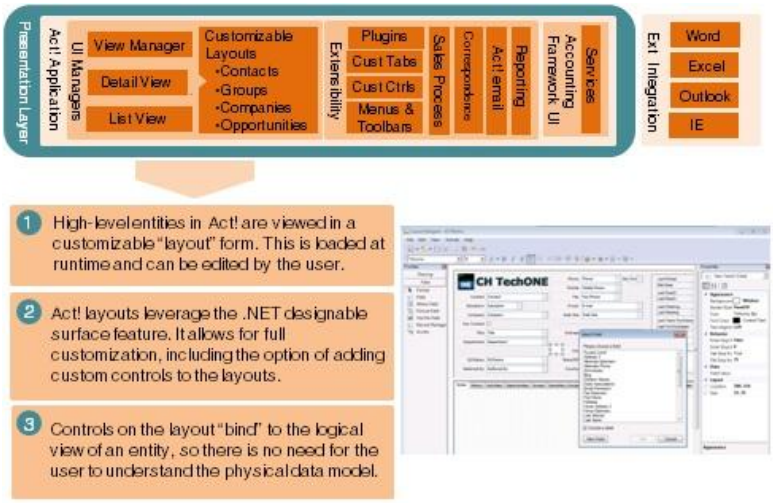

Figure 4: Example showing the use of the presentation layer – layouts

Act! Premium (access via web) and AJAX

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.

Act! Premium (access via web) makes extensive use of AJAX to provide data navigation that is both highly interactive and fast. In Act! Premium (access via web), you navigate through a number of entity details that are presented in a consistent layout. Act! 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 on entity tabs. The result is a highly interactive user experience and a reduced server load.

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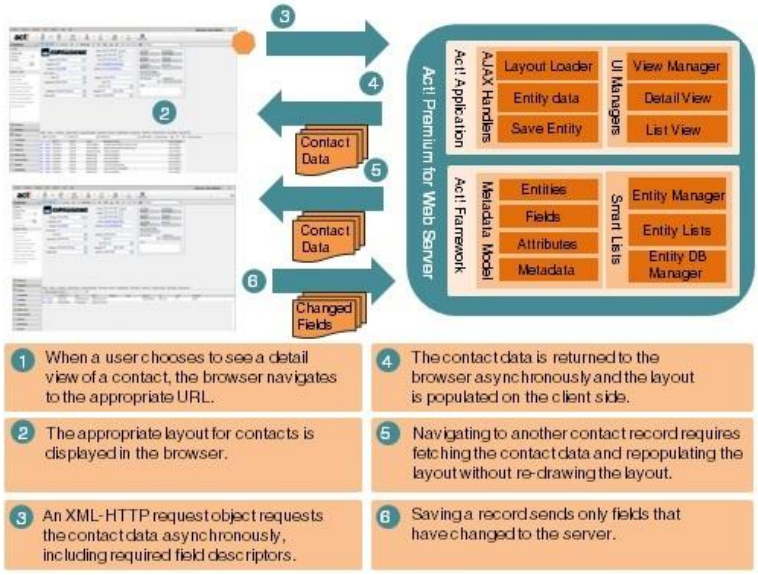

Figure 5: Using AJAX to provide fast navigation of contact details

Customization

You can customize Act! to streamline actions you perform often and to display the tools and data you use frequently.

Customizing[3] Fields

One of the powerful features of Act! is its ability to allow full customization of fields. In Act!, the field sets of primary entities (contact, group, company, and opportunity) are fully customizable. These types are metadata-driven and much of their landscape and data is discovered dynamically.

[3] In Act! Premium (access via Web), some administrative functions must be performed on the Web server.

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

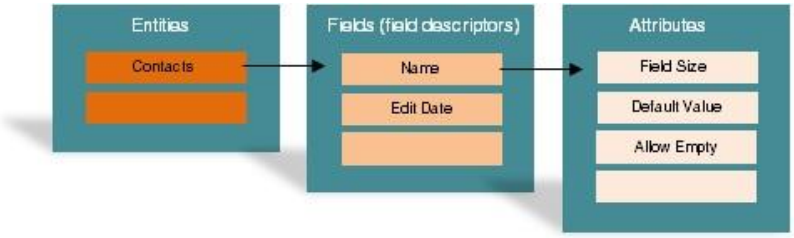

Figure 6: Entities, fields, and attributes

In 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 be created within Act! using the Define Fields feature.

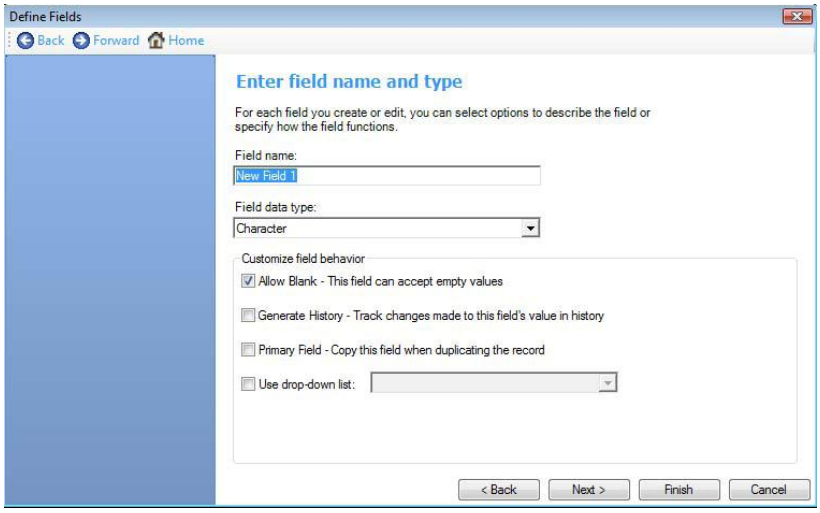

Figure 7: Define fields

The three Act! field types are:

- **System not editable fields** – these fields are installed and maintained by the database. You cannot modify System not editable fields, but you can

change their position in a layout. Examples of System not editable fields are Last Meeting and Edit Date.

- **System editable fields** – these fields cannot be deleted and you are 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 or you can remove it from a layout. Examples of System editable fields are Contact, Phone and Address fields.
- **User-defined fields** – these are fields you create and define. There are default user-defined fields that can be customized and you can create your own user-defined fields. Examples of User-defined fields are on the User Fields tab in the Contact record.

Some unique ways you can customize 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. Drop-down lists can be customized by end users or controlled only by the 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.

- Linking a field between a company and contact record.[4] 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[5] Layouts

You can customize layouts for contacts, companies, opportunities, and groups from within the Act! application. Each entity can have multiple layouts that display different sets of fields depending on user requirements.

With the layout designer, you can:

- 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)

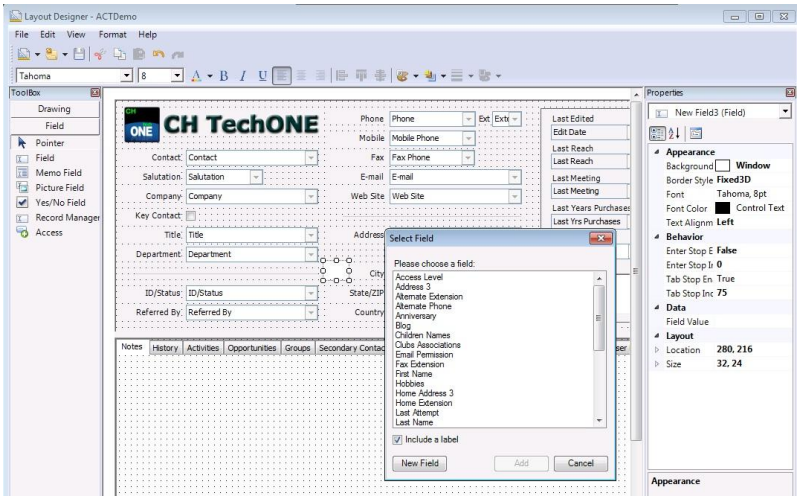

Figure 8: Layout Designer

You can customize layouts for contacts, companies, opportunities, and groups from within the Act! application.

[4] Not all fields can be linked and linked fields must be compatible.
[5] In Act! Premium (access via Web), some customization features must be performed on the Web server.

Act! and 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[6] Reports

The Report Designer can be used to create new reports or to customize the standard reports that ship with Act!. 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 Act! Premium and 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.

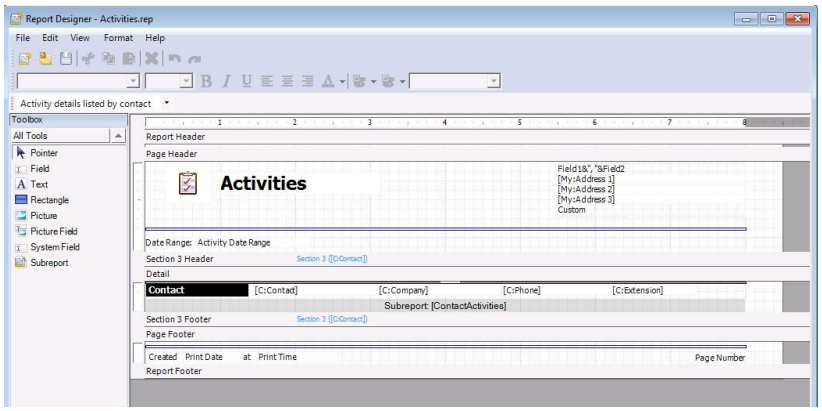

Figure 9: Report Designer

Customizing[7] Word-Processing Templates

With Act!, users can create documents, such as letters, memos, and fax cover sheets. 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

[6] In Act! Premium (access via Web), customizing reports must be performed on the Web server.
[7] In Act! Premium (access via Web), customizing templates must be performed on the Web server.

contact, 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 a document to a contact record, print it, or attach it to an email message.

Customizing[8] Dashboard Components

Act! includes 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 be more productive. The dashboard also provides a roll-up of team activities so managers get the information they need to quickly assess the performance of all team members and more effectively set individual 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 dashboard is flexible and customizable, allowing users and managers to customize individual components or create new ones[9] 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 to customize any default dashboard, or create new dashboard components.

Act! includes a Dashboard which provides a comprehensive, graphical representation of key activity and opportunity information in a highly interactive format.

[8] In Act! Premium (access via Web), customizing Dashboard components must be performed on the Web server.
[9] To add, edit, or remove dashboard components, you must have an Act! manager or administrator security role.

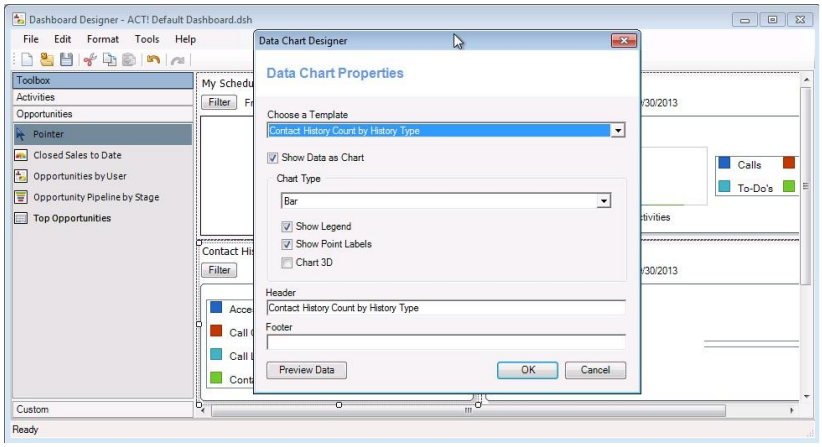

Figure 10: Dashboard Designer

Database Access and Security

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

Database Access via OLEDB Provider

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

Security is maintained using the Act! OLE DB Provider for Reporting, which means that users can only see the data that they have the rights to see.

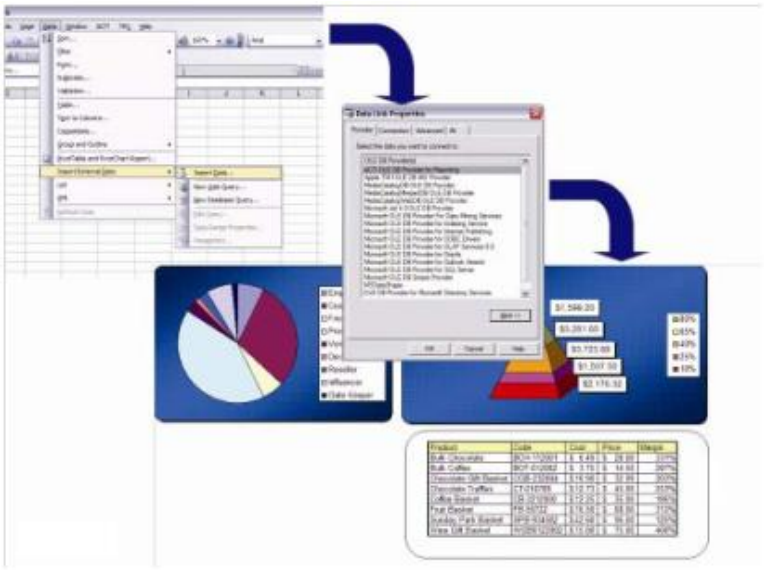

Figure 11: Example of accessing Act! data from Excel using the Act! OLE DB Provider for Reporting

Reader Account

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 Act! Premium databases only and enables access to all Act! Premium databases on the machine.

SA Password

For those that need Administrator access to the Act! database for reporting and server-side backups, the 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 Act! Premium databases only and must be obtained through your regional Act! sales team.

Security

The Act! security model is designed to maximize flexibility and provide a variety of options for securing data. Security can be enforced at the database level, the

The Act! security model is designed to maximize flexibility and provide a variety of options for securing data.

feature level, the record level, and the field level. The entire Act! product family uses the same Act! security model, ensuring consistent data protection.

The following is a brief overview of Act! security. For more detailed information, see the Act! Security Model whitepaper.

User Roles

Administrator - Administrator is the highest level role in Act!. Users with this role can access all features and all records that have public or limited access. Only private data owned by other users is inaccessible to the administrator. 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 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 or others requiring only limited access to features in Act!.

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

Types of Security

Database Security - controls who can use a database. Individuals access an Act! database using a unique user name. The administrator also can implement a password policy to further restrict access.

Feature Security - controls who can use specific features. Each Act! user is assigned a role. Each role dictates which features (permissions) a user can access. Act! also offers custom permissions which can be granted to or withheld from a user.

Record Security - controls who can see data and what data they can see. Every record has an owner known as the record manager. When a record is marked private, only the record manager can view it. Users can access all public data, their private data, and any limited access records to which they have 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, opportunity, or group) to access any extended data (notes, history, activities, or secondary contacts) belonging to that parent record.

Field-Level Security - controls who can view and modify fields and what fields they can view and modify. Users who are assigned administrator or manager roles 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 functionality.

Figure 12: Act! security model

Conclusion

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

Whether you choose to customize Act! for your line of business, or to deliver the contact management system "out-of-the-box", Act! allows you full control and flexibility.

About Swiftpage

Swiftpage is committed to empowering individuals, small business and mobile sales teams to better manage their business interactions, more intelligently engage their customers, and convert more interactions into transactions. The company's growing network of partners, customers, end-users and employees collectively represent the Swiftpage Nation, united across the globe as one team, on one journey. Learn more at www.swiftpage.com and join the conversation at social.swiftpage.com.

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