



Professional Expertise Distilled

Salesforce CRM – The Definitive Admin Handbook

Third Edition

Successfully administer Salesforce CRM and Salesforce mobile implementations with best practices and real-world scenarios

Paul Goodey

[PACKT] enterprise 
PUBLISHING professional expertise distilled

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BIRMINGHAM - MUMBAI

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I have enjoyed working on the third edition of this book, and I am thankful to the many people who have helped in the creation of this work. First and foremost, I would like to thank you for purchasing this book. I sincerely hope you find it as enjoyable and useful to read as it has been to write.

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If you haven't participated in Salesforce.com's online user communities, such as `success.salesforce.com` (where you can post questions or ideas), `developer.force.com`, LinkedIn Salesforce.com user groups, and Twitter (look out for hash tags `#salesforce` and `#askforce`), I strongly recommend them as they are a truly valuable place to exchange information.

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Preface

As an industry-leading Customer Relationship Management (CRM) application, Salesforce CRM helps enterprises, big and small, improve client relations. It greatly enhances sales performance and provides your business with a robust CRM system. In order to achieve optimum performance from the Salesforce CRM system, there are many areas for you as the Salesforce administrator to tackle. This is the only book that provides a comprehensive guide to the administrative aspects of Salesforce CRM.

This book will give you all the information you need to administer this powerful CRM application. It is the definitive guide to implement Salesforce CRM. Whether you are looking to enhance the core features, or you have already started customizing your Salesforce CRM system and are looking for guidance on advanced features, this book will show you how to get the maximum benefit from this innovative product.

What this book covers

Chapter 1, Organization Administration, shows you how to set up the organization-wide settings that affect the look and feel of the system and provide access to features for all users within the system.

Chapter 2, User Management in Salesforce CRM, describes how to manage and administer user records and password policies, and describes how profiles and permission sets affect the permissions of individual users.

Chapter 3, Configuration in Salesforce CRM, covers the various methods to configure and tailor the system to suit the way information is used within the organization through the use of objects and fields as well as providing a look at custom field governance.

Chapter 4, Data Management, looks in detail at the data access security models in Salesforce CRM and the mechanisms to control access, such as Organization-wide Sharing Defaults (OWD) and sharing mechanisms.

Chapter 5, Data Analytics with Reports and Dashboards, discusses and describes the analytics building blocks within Salesforce CRM.

Chapter 6, Implementing Business Processes in Salesforce CRM, discusses the various methods to automate business activities and approval mechanisms in order to align them with business processes.

Chapter 7, Salesforce CRM Functions, looks at the core functional areas within Salesforce CRM, such as Marketing Administration, Salesforce Automation, Customer Service, and Salesforce Chatter, and describes how you can administer and measure the process from campaign to customer and beyond.

Chapter 8, Extending Salesforce CRM, explains how Visualforce coding can be used to extend the standard page functionality in Salesforce CRM and provides an example walk-through of setting up an enterprise mash-up between a web utility and a Salesforce CRM Visualforce page.

Chapter 9, Best Practices for Enhancing Productivity, looks at methods to improve the experience of users in Salesforce CRM and the ways to measure user adoption. AppExchange Marketplace is covered along with best practices for app selection and a walk-through of the process of installing an app from AppExchange.

Chapter 10, Mobile Administration, describes how mobile devices have become commonplace in both the personal and professional lives of users, and covers the administration features of the mobile business solutions provided by Salesforce.

What you need for this book

The prerequisite for this book is a computer with an Internet connection and one of these supported browsers: Google® Chrome™, Mozilla® Firefox®, Apple® Safari®, or Microsoft® Internet Explorer®. You will need either the Enterprise, Unlimited, Performance, or Developer edition of Salesforce CRM along with System Administrator permission.

Who this book is for

This book is for administrators who want to develop and strengthen their Salesforce CRM skills in the areas of configuration and system management. Whether you are a novice or a more experienced admin, this book aims to enhance your knowledge and understanding of the Salesforce CRM platform. By the end of the book, you will be ready to configure and administer Salesforce CRM and Salesforce mobile solutions in a real-world environment that fully supports your business needs.

Conventions

In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.

Code words in text, database table names, folder names, filenames, file extensions, pathnames, dummy URLs, user input, and Twitter handles are shown as follows: "Salesforce provides a set of standard, prebuilt components, such as `<apex:actionFunction>` and `<apex:actionStatus>`."

A block of code is set as follows:

```
var address =
  "{!SUBSTITUTE(JSENCODE(Account.BillingStreet),'\r\n',' ')}, " +
  "{!Account.BillingCity}, " + "{!Account.BillingPostalCode}, " +
  "{!Account.BillingCountry}";
```

New terms and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Navigate to the **Accounts** tab and select an existing account."

 Warnings or important notes appear in a box like this.

 Tips and tricks appear like this.

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1

Organization Administration

Application security is always important – even more so when the application is delivered across a public network, such as the Internet. **Salesforce.com** has developed various mechanisms to secure the platform and reduce the chances of unauthorized people accessing your company's data. This chapter describes the way login attempts to the system are controlled and explores the features available to help you manage your users' access to the Salesforce CRM application.

In this chapter, we will also look at establishing your company profile within Salesforce and how core information, such as the details that are provided when your company first signs up with Salesforce.com, can be managed.

You will also be shown how to find the Salesforce Setup menu and will be introduced to the settings available for the organization-wide customization of the application's user interface along with a detailed description of the searching facilities offered by the Salesforce CRM application.

Throughout this chapter, notes and tips intended to offer further guidance within areas of functionality are provided; they have been generated from practical results and experience of the Salesforce CRM system administration.

In this chapter, we will cover:

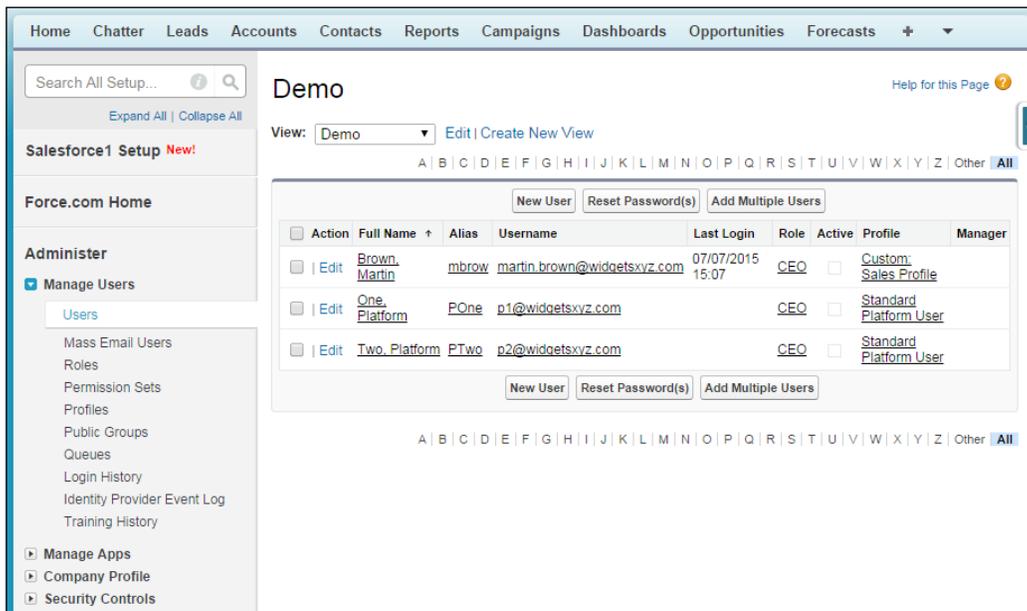
- The Salesforce Setup menu
- User login and authorization
- Company profile
- User interface
- Search options

To start, we will look at the location and the capabilities of the Salesforce Setup menu.

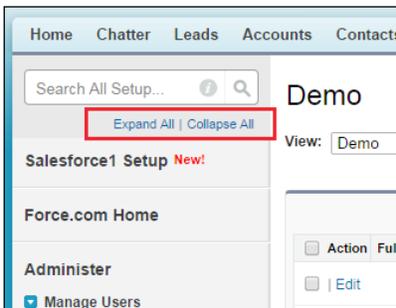
The Salesforce setup menu

Depending on your organization's user interface settings, you will access the setup menu from either the drop-down menu under your name or as a top-level **Setup** link, as shown in the upcoming screenshots.

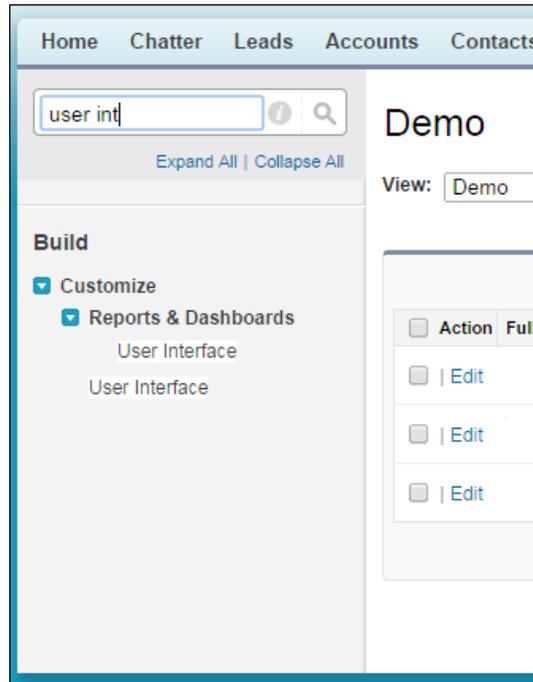
The setup menu appears on the left-hand side of the page. Clicking on the menu option text (or the [>] icon to the left of a menu option) expands the menu; you can then select the required menu item link, as shown in the following screenshot for the **Manage Users | Users** setup page:



Clicking on the down arrow icon to the left of the expanded menu option collapses the menu option. You can also expand or collapse all the menu options by clicking on the **Expand All** or **Collapse All** links, as shown in the following screenshot:



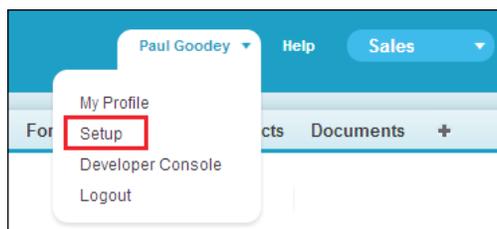
To quickly find a Setup menu item, type the first few characters of the setup name in the Quick Find search box. As you type, any options that match your search term appear in the setup menu. For example, to find the **User Interface** page, start to type `user interface` in the Quick Find box, as shown in the following screenshot:



At the top of the Salesforce page, you might see the **Setup** link, as shown in the following screenshot:



If you do not see the **Setup** link at the top of the Salesforce page, then click on your name and you will then see the Setup option, as shown in the following screenshot:



This setting is controlled by the **Enable Improved Setup User Interface** setting, which is covered later in this chapter.



As a system administrator, you will use the Setup menu frequently, so it is recommended that you enable the improved setup user interface.

The improved setup user interface setting is activated for all new instances by default. Existing Salesforce instance admins should be aware that this user interface setting determines how everyone in your organization accesses the Setup menu.

When describing any setup steps within this book, we will begin the navigation path from **Setup**. For example, to enable the Improved Setup User Interface, we will present the navigation path as **Setup | Customize | User Interface | Enable Improved Setup User Interface**.

We will now look at how users' login requests are verified and authorized by the Salesforce CRM application.

User login and authorization

Organizations have several methods of accessing the Salesforce CRM application. Access can be gained from either the user interface (using a web browser), the API (for example, using an integrated client application or the **Apex Data Loader**), a desktop client (for example, Salesforce for Outlook), or from a mobile client application.

Whenever a login attempt is made to Salesforce using any of these preceding methods, the user's login request is authorized by the system using the following sequence of checks:

- Does the user's profile have any login restrictions?
- Does the user's IP address appear within the organization's trusted IP address list?
- Has the user been activated from this IP address previously?
- Does the user's web browser have a valid browser cookie stored from Salesforce?

If the user's login is from neither a trusted IP address nor a browser with a valid Salesforce cookie, the login is denied. To gain access to Salesforce, the user's identity must be confirmed by successfully completing the computer activation process.

Now, let's look at each of these login checks in more detail.

Does the user's profile have any login restrictions?

The login hour and IP address restrictions can be set for the user's profile. If these are set and there are login attempts from a user outside the specified hours or from an unknown IP address, access is denied.

Login hour restrictions

If login hour restrictions are set for the user's profile, any login attempt outside the specified hours is denied. Login hour restrictions can be set on the required user's profile by carrying out the following steps:

1. Go to the **Profile** menu, by navigating to **Setup | Manage Users | Profiles**. Now, choose a profile, select the **Login Hours** link, and then click on **Edit**.

Set the days and hours when users with this profile can log in to Salesforce.com.



The login hours that are set are based on the default time zone of the organization, as described later in this chapter.

2. Navigate to **Setup | Company Profile | Company Information**, click on the **Edit** button, and select the required time zone from the **Default Time Zone** picklist.

The login hours that are set apply strictly to that exact time even if a user has a different personal time zone or if the organization's default time zone is changed.

3. To allow users to log in at any time, click on **clear all times**, as shown in the following screenshot:

Day	Start Time	End Time	
Monday	8:00 AM	7:00 AM	clear times
Tuesday	8:00 AM	7:00 PM	clear times
Wednesday	8:00 AM	7:00 PM	clear times
Thursday	8:00 AM	7:00 PM	clear times
Friday	8:00 PM	7:00 PM	clear times
Saturday	8:00 AM	8:00 AM	clear times
Sunday	8:00 AM	8:00 AM	clear times

[clear all times](#)

4. To prevent users from accessing the system on a specific day (say, to carry out internal system maintenance), set the start time and end time to the same value, for example, Start Time to 8:00 AM and End Time to 8:00 AM (as shown in the Saturday and Sunday example settings in the previous screenshot).

IP address restrictions

If IP address restrictions are defined for the user's profile, any login attempt from an unknown IP address is denied.

To restrict the range of valid IP addresses through the **Profile** menu, navigate to **Setup | Manage Users | Profiles**. Now, choose a profile, select the **Login IP Ranges** link, and then click on **Add IP Ranges**.

Enter a valid IP address in the **Start IP Address** field and a higher IP address in the **End IP Address** field.

The start and end addresses specify the range of IP addresses from which users can log in. To allow a login from a single IP address, enter the same address in both fields.

For example, to allow a login from only **88.110.54.113**, enter **88.110.54.113** as both the start and end IP addresses, as follows:



Login IP Ranges

Enter the range of valid IP addresses from which users with this profile can log in.

IP Start Address	IP End Address
88.110.54.113	88.110.54.113

Save Save & New Cancel

Does the user's IP address appear within your organization's trusted IP address list?

This check is performed if profile-based IP address restrictions are not set.

If the user's login is from an IP address listed in your organization's trusted IP address list, the login is allowed.

Trusted IP range

To go to the **Trusted IP range** settings, navigate to **Setup | Security Controls | Network Access**.

Click on **New** and enter a valid IP address in the **Start IP Address** field and a higher IP address in the **End IP Address** field.

The start and end addresses specify the range of IP addresses from which users can log in. To allow a login from a single IP address, enter the same address in both fields.

For example, to allow a login from only **88.110.54.113**, enter **88.110.54.113** as both the start and end addresses, as shown in the following screenshot:

The screenshot shows a web form titled "Trusted IP Range Edit" under the "Network Access" section. A "Help for this Page" link with a question mark icon is in the top right. Below the title is a paragraph explaining that trusted IP addresses allow users to log in without security tokens. The form has a header "Please specify IP range" with a red vertical bar and "= Required Information" to its right. It contains two input fields: "Start IP Address" with the value "88.110.54.100" and "End IP Address" with the value "88.110.54.113". At the bottom are "Save" and "Cancel" buttons.

Has the user been activated from this IP address before?

Each user has a list of IP addresses from which they've been activated. If the user has previously been activated from this IP address, then this IP address is added to the user's personal list and is never challenged again.

To view and remove the login IP addresses that have been recorded by your users, navigate to **Setup | Security Controls | Activations**. To remove **Activated Login IP**, click on the checkbox and then click on the **Remove** button, as shown in the following screenshot:

Activated Login IP Help for this Page ?

The list below shows login IP addresses representing the device IP addresses that have been activated by a user.

View: All [Create New View](#) <Previous Page | Next Page>

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | **All**

Remove					
<input type="checkbox"/>	Username ↑	Login IP	Created Date	Is Authenticated	Challenge Sent
<input type="checkbox"/>	sales@widgetsxyz.com	81.178.189.173	28.01.2014 17:37	✓	28.01.2014 17:37
<input type="checkbox"/>	sales@widgetsxyz.com	82.12.148.221	28.05.2014 22:21	✓	
<input type="checkbox"/>	sales@widgetsxyz.com	31.100.158.80	11.06.2014 08:18	✓	11.06.2014 08:18
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	80.47.223.92	01.01.2010 11:14	✓	
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	80.47.236.99	18.02.2010 05:44	✓	18.02.2010 05:44
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	88.110.54.113	01.01.2011 12:04	✓	01.01.2011 12:04
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	81.178.188.171	31.01.2011 02:44	✓	31.01.2011 02:44
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	81.178.177.167	23.07.2011 14:15	✓	23.07.2011 14:17
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	81.178.189.7	21.04.2013 21:59	✓	21.04.2013 22:00
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	82.12.148.221	02.07.2014 20:38	✓	02.07.2014 20:38

Activated Client Browsers Help for this Page ?

The list below shows Activated Client Browser information, with the browser agent information stored when a user accesses an organization from an activated device IP address.

View: All [Create New View](#) <Previous Page | Next Page>

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | **All**

Remove					
<input type="checkbox"/>	Username ↑	User Agent String	Proxy Info	Created Date	Last Update
<input type="checkbox"/>	sales@widgetsxyz.com	Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/35.0.1916.153 Safari/537.36		28.01.2014 17:38	02.07.2014 20:43
<input type="checkbox"/>	sales@widgetsxyz.com	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_8_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/35.0.1916.114 Safari/537.36		11.06.2014 08:21	11.06.2014 08:21
<input type="checkbox"/>	trevor.howard@widgetsxyz.com	Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/35.0.1916.153 Safari/537.36		02.07.2014 20:43	02.07.2014 20:43

Does the user's web browser have a valid cookie stored from Salesforce?

A **cookie** is a small file that contains a string of characters that are sent to your computer when you visit a website. Whenever you visit the website again, the cookie allows that site to recognize your web browser.

The browser will have the Salesforce cookie if the user has previously used that browser to log in to Salesforce and has not cleared the browser cookies.

So, if the user's login is from a browser that includes a Salesforce.com cookie, the login is allowed.

Computer activation process

If the user's login is from neither a trusted IP address nor a browser with a Salesforce cookie, the login is denied and gets blocked, and Salesforce must verify the user's identity.

A trusted, genuine user can access the Salesforce CRM application using the following means:

- User interface (using a web browser)
- API (for example, using an integrated client application or the Apex Data Loader)
- Desktop client (for example, Salesforce for Outlook)

User interface

To gain access through the user interface for the first time, the user is prompted to select how they would like to receive the verification code. Here, the verification code can be received by either an SMS or an e-mail, depending on whether the company-wide SMS-based identity confirmation option is enabled.

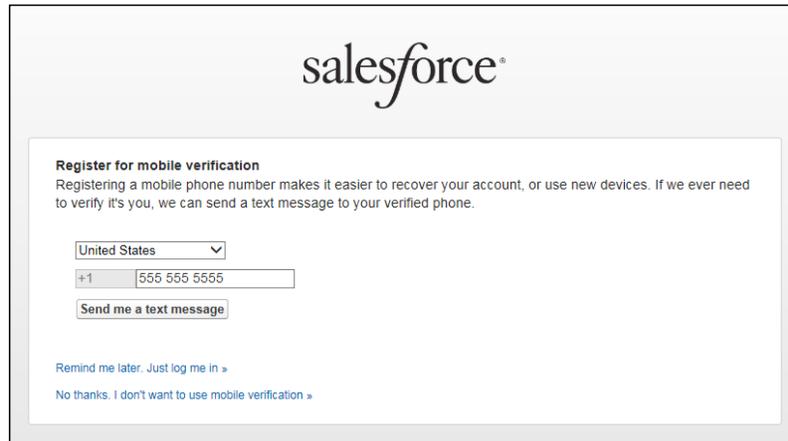


For new organizations, an SMS text message is the default method for the computer activation process and can only be disabled by sending a request to Salesforce support. For existing organizations, the SMS text message activation can be enabled by you as the system administrator but, once enabled, it requires a request to Salesforce support to deactivate it.

SMS text message verification code

To receive the SMS text message verification code, set SMS-based identity confirmation to be enabled (this has enabled by default since the Spring of 2014). This feature enables users to receive a **One-Time PIN(OTP)** delivered via SMS. This is set by navigating to **Setup | Security Controls | Session Settings** and then enabling the **Enable SMS-based identity confirmation** option.

Once enabled, users must verify their mobile phone number before taking advantage of this feature. This will present the following screenshot:



The screenshot shows the Salesforce mobile verification registration interface. At the top is the Salesforce logo. Below it, the heading "Register for mobile verification" is followed by a paragraph explaining that registering a mobile phone number makes it easier to recover an account or use new devices. The form includes a dropdown menu for "United States", a text input field for a phone number with a "+1" prefix and "555 555 5555" entered, and a "Send me a text message" button. At the bottom, there are two links: "Remind me later. Just log me in >" and "No thanks. I don't want to use mobile verification >".

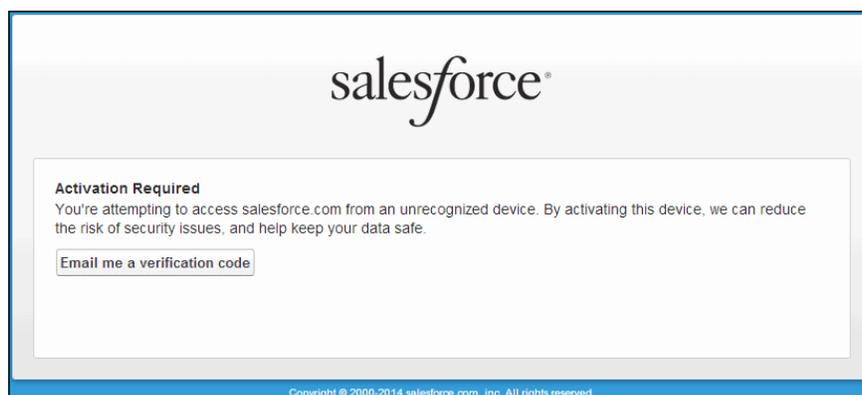
E-mail message verification code

To receive an e-mail verification code, users must have the **Email-Based Identity Confirmation Option** setting enabled on their profile or included as a permission set.



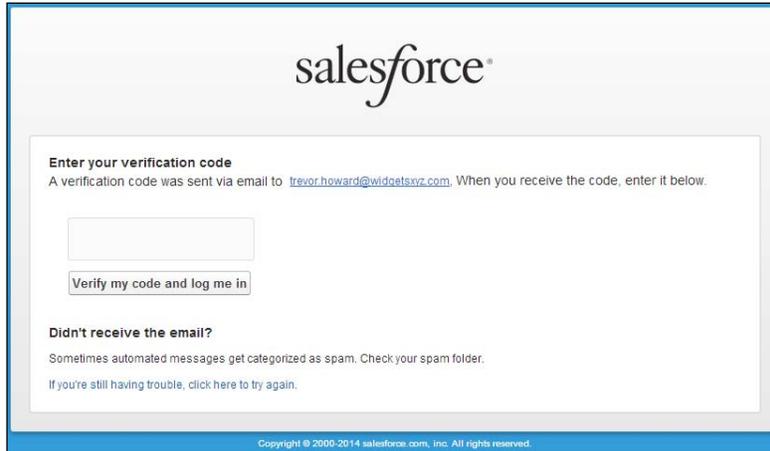
The **E-mail-Based Identity Confirmation Option** is only available if the **Enable SMS-based identity confirmation** option is enabled.

Once enabled, users can click on the **Email me a verification code** button to send an activation e-mail to the address specified in the user's Salesforce user record, as follows:

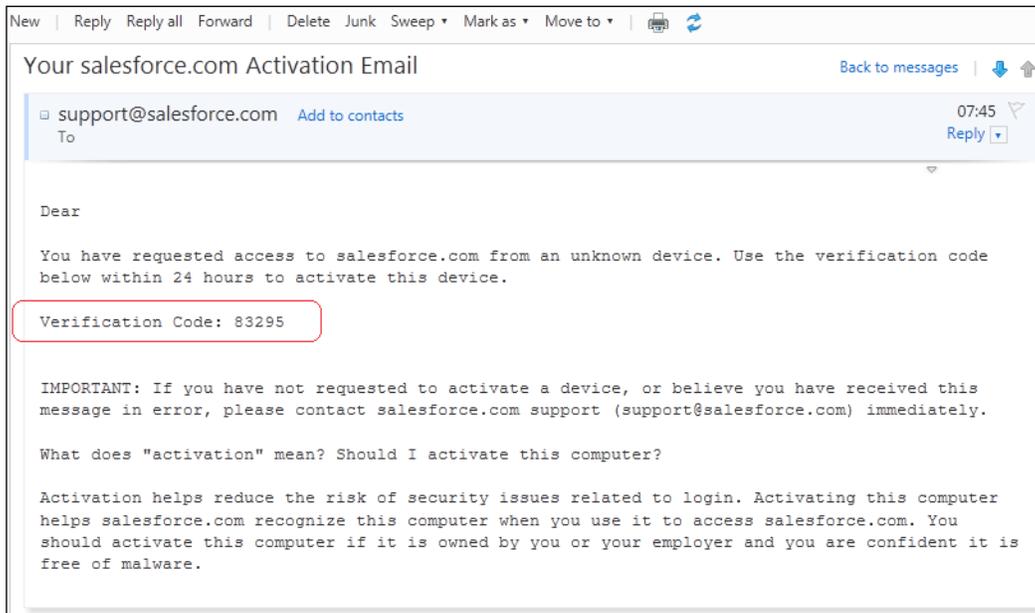


The screenshot shows the Salesforce activation required screen. At the top is the Salesforce logo. Below it, the heading "Activation Required" is followed by a paragraph explaining that the user is attempting to access Salesforce.com from an unrecognized device and that activating the device can reduce the risk of security issues. A button labeled "Email me a verification code" is visible. At the bottom, there is a copyright notice: "Copyright © 2000-2014 Salesforce.com, Inc. All rights reserved."

On clicking on the **Email me a verification code** button, a new screen is presented that allows you to enter a verification code, as shown in the following screenshot:



Salesforce sends the verification code e-mail to the e-mail address associated with the user's record in Salesforce. Here, the following screenshot shows you an e-mail example:

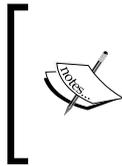


The e-mail instructs the user to enter the verification code into the browser to activate the laptop for login to Salesforce.

The activation code within the e-mail is valid for up to 24 hours from the time the **Email me a verification code** button was clicked on. After 24 hours, the activation link will expire and the user must repeat the activation process.

Confusion can occur if your company has remote users who connect to Salesforce away from the company network, such as from home or from public Internet connections. The remote users are likely to have dynamically assigned IP addresses set as their computer identity. Hence, whenever they attempt to log in, Salesforce will identify it as an unknown IP address, prompt for verification, and the remote user will have to click on the verification button.

The remote user will then have to access the e-mail associated with their Salesforce user record to retrieve the activation e-mail, and it is here that confusion can occur. If the remote user has to access a corporate web e-mail using a **Virtual Private Network (VPN)** connection, then clicking on the activation link might not work because the IP address that is being validated might now no longer be the same IP address that was used by the browser. This is because the VPN connection might most likely be using a web proxy.



It is recommended that you establish a policy to ensure the user clicks on the verification button while they're connected to the VPN or check whether they can access non-VPN-based web mail (if this is permitted in your company) to ensure that the validated IP addresses are the same.

This is covered in more detail in the *Session settings* section in *Chapter 2, User Management in Salesforce CRM*.

API or a desktop client

To get access using the API or a desktop client (for example, using the Apex Data Loader), the user must add his/her security token at the end of the password in order to log in. A security token is an automatically generated key from Salesforce. For example, if a user's password is pa\$\$word, and their security token is xxxxxx, then the user must enter pa\$\$wordxxxxxx.

Users can obtain their security token by changing their password or resetting their security token via the Salesforce.com user interface by navigating to **Your Name | My Settings | Personal | Reset My Security Token** and then clicking on the **Reset Security Token** button.

When a user changes their password or resets their security token, Salesforce sends a new security token to the e-mail address associated with their Salesforce user record. The security token is valid until a user resets their security token, changes their password, or has their password reset by a system administrator.



Do not enter a security token within your password when accessing Salesforce from a web browser. It is recommended that you obtain your security token via the Salesforce user interface from a trusted network prior to attempting access from a new IP address.

When a user's password is changed, the user's security token is automatically reset. The user will experience a blocked login until they add the security token to the end of their password or enter the new password after you have added their IP address to the organization's trusted IP range.

Establishing your company profile within Salesforce

The company profile contains core information for your organization within Salesforce, some of which is captured during the initial system sign-up, and includes the following:

- Company information and primary contact details
- The default language, locale, and time zone
- License information
- Fiscal year settings
- Currencies and exchange rates

Company information and primary contact details

When your company signs up with Salesforce, the information provided is displayed on the **Company Information** page. This page can be accessed by navigating to **Setup | Company Profile | Company Information**.

From the **Company Information** page, you can edit the company default localization settings and primary contact details, as shown in the following screenshot:

Company Information [Help for this Page](#) ?

WidgetsXYZ

The organization's profile is below.

[User Licenses \[13\]](#) | [Permission Set Licenses \[1\]](#) | [Feature Licenses \[10\]](#)

Organization Detail [Edit](#) [Currency Setup](#)

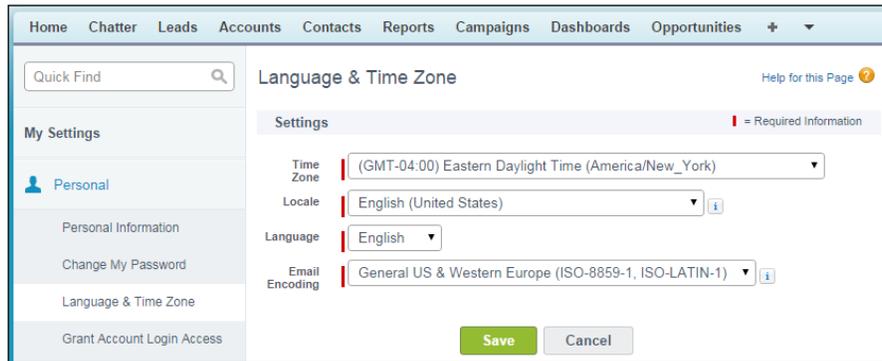
Organization Name	WidgetsXYZ	Phone	555-123-5678
Primary Contact	Martin Brown	Fax	555-123-5679
Division	ICT	Default Locale	English (United States)
Address	5 East 345th Street New York, NY 55511 US	Default Language	English
Fiscal Year Starts In	January	Default Time Zone	(GMT-04:00) Eastern Daylight Time (America/New_York)
Newsletter	<input type="checkbox"/>	Currency Locale	English (United States)
Admin Newsletter	<input type="checkbox"/>	Used Data Space	842 KB (4%) View
Hide Notices About System Maintenance	<input type="checkbox"/>	Used File Space	302 KB (1%) View
Hide Notices About System Downtime	<input type="checkbox"/>	API Requests, Last 24 Hours	0 (5,000 max)
		Streaming API Events, Last 24 Hours	0 (10,000 max)
		Restricted Logins, Current Month	0 (0 max)
		Salesforce.com Organization ID	00DA00000000IIs1
Created By	Paul Goodey , 19/12/2009 13:01		Modified By
			Paul Goodey , 14/08/2011 11:43

[Edit](#)

The default language, locale, and time zone

The company information settings for the language, locale, and time zone can affect how key data is handled in the organization.

However, individual users can set their own language, locale, and time zone that will override the organization-wide settings by navigating to **Your Name | My Settings | Personal | Language & Time Zone**, as shown in the following screenshot:



The default language

This is the primary language for the organization. All interface text and online help is displayed in this language. Individual users can, however, set their own language that will override the organization-wide settings.



For global organizations, it is recommended that you consider how the setting of language impacts the user's ability to access and share information and whether a common language is preferred to aid reporting and system administration.

You can use the feature called **Language Settings** (described later) to restrict the languages that your users can set in their personal information language setting.

The default locale

The Default Locale setting affects the format of date, date/time, and number fields.

For example, a given date in the **English (United States)** locale would appear as **07/27/2016** and in the **English (United Kingdom)** locale as **27/07/2016**.

The time in the **English (United States)** locale is displayed using a 12-hour clock with A.M. and P.M. (for example, 3:00 P.M.), whereas, in the **English (United Kingdom)** locale, it is displayed using a 24-hour clock (for example, 15:00).

Numbers in the **English (United States)** locale would be displayed as **1,000.00** and in the **German** locale as **1.000,00**.

However, individual users can set their own locale that will override the organization-wide settings.

The default time zone

This is the primary time zone in which your organization is located, for example, the head office location. However, individual users can set their own time zone that will override the organization-wide settings.

The **Company Information** page also displays all of the base licenses, active users, and feature licenses that have been purchased by your organization.

License information

There are three types of licenses:

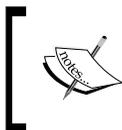
- **User license:** A user license entitles a user to a different functionality within Salesforce and determines the profiles available to the user
- **Feature license:** A feature license entitles a user to an additional Salesforce feature, such as **Marketing** or **Offline User**
- **Permission set license:** A permission set license is used to provide a user with access to certain features that are not part of their user licenses



Salesforce bills an organization based on the total number of licenses and not on the number of active users.

Currencies and conversion rates

Currency settings are organization-wide within Salesforce and can be set using either a single-currency option using the **Currency Locale** setting on **Company Profile**, or as a multiple-currency option where you can add currencies and set conversion rates using the **Manage Currencies** link within the **Company Profile** section.



Multiple currencies can only be enabled by sending a request to Salesforce customer support. When activated, the **Currency Locale** field and its value are passed to a new field, which is **Corporate Currency**, as well as to **Company Profile**.

The corporate currency reflects the currency in which your company reports revenue and is used as the rate that all other currency conversion rates are based on. This is initially set by Salesforce.com when the Salesforce application is activated.

All organizations, whether using single or multiple currencies, are set by default with only one currency in **Company Profile**. For single currency instances, this setting is accessed by navigating to **Setup | Company Profile | Company Information** and specifying the **Currency Locale** field. For multiple currencies, this is set by navigating to **Setup | Company Profile | Manage Currencies** and then clicking on the **Change Corporate** button.

Single-currency

In a single-currency organization, you set the organization-wide currency locale for your company and your Salesforce users cannot set individual currency locales.

Multiple-currency

In a multiple-currency organization, you set the corporate currency instead of the currency locale, and your Salesforce users can also set their individual currency by navigating to **Your Name | My Settings | Personal | Personal Information**.



The **Multiple Currencies** activation is available by sending a request to Salesforce customer support.

Your Salesforce user's individual currency is used as the default currency in their own reports, quotas, forecasts, and any records that contain currency amounts, such as opportunities.



Currency becomes a required field on records where it has been added or was originally defined, so this must be considered when activating the **Multiple Currencies** option and importing data or custom object creation.

Users can also create opportunities (and all other data records that contain currency amounts) using any other available active currency.



Only active currencies can be used in currency amount fields.

Active currencies

The list of active currencies represents the countries or regions in which your company trades. Only an active currency can be set by you, as the system administrator on the organization profile, or by your users on their individual user records or on data records in the currency field.

Manage currencies

The **Manage Currencies** section enables you to maintain a list of active currencies and their conversion rates in relation to the corporate currency and can be accessed by navigating to **Setup | Company Profile | Manage Currencies**.



The **Manage Currencies** option appears when your organization has enabled **Multiple Currencies**, which are currently available by sending a request to Salesforce customer support.

Changing the conversion rates will update all existing records with the new conversion rates—even the closed opportunities. As a result, you will not be able to measure financial changes due to the effects of currency fluctuations unless you have implemented **Advanced Currency Management**, which stores dated exchange rates.

Dated exchange rates

Dated exchange rates allow you to track conversion rates when an opportunity closes, enabling the accurate reporting of opportunity-converted amounts based on the rate that was set at the opportunity's close date. This is made possible because the historic conversion rates are stored, and rate changes after that close date can be tracked. Therefore, reports can include the opportunity amount based on the conversion rate at the close date instead of the rate at the time at which the report is run.



Updating currency conversion rates will not change the original opportunity amounts; it will only change the converted amounts. Accounts and their associated contacts must use the same default currency. Account and contact records can be imported using active or inactive currencies. However, importing lead records requires the use of active currencies only.

Dated exchange rates are activated by setting the **Advanced Currency Management** option and are used for opportunities, opportunity products, opportunity product schedules, campaign opportunity fields, and reports related to these objects and fields.

 Dated exchange rates are not currently used in forecasting.

When **Advanced Currency Management** is first enabled, your existing exchange rates automatically become the first set of dated exchange rates.

These exchange rates will be valid until you set another set of exchange rates by navigating to **Setup | Company Profile | Manage Currencies | Manage Dated Exchange Rates**.

If you enable **Advanced Currency Management**, you cannot create roll-up summary fields that calculate currency in the opportunity object. Any existing currency related roll-up summary fields in the opportunity object will be disabled and their values will no longer be calculated.

How do you convert currency amounts automatically using the Data Loader?



In a Salesforce organization with multicurrency enabled, when you change the currency on a record via the browser, currency amounts on that record are not updated. Thus, if you change the currency of an opportunity whose amount is 5,000 from USD to EUR, the amount remains 5,000 and is not converted from USD 5,000 into EUR 3,900 (based on a USD:EUR exchange rate of 1:0.76). However, currency amounts are converted when you change the record currency using the Data Loader. This means that changes to the currencies of records will cause a mass recalculation of any currency fields on those records.

To change the currency of records using the Data Loader, update the **CurrencyIsoCode** field with the three-letter ISO code of the currency you want to set, for example, USD for US Dollars, EUR for Euros, and so on.

Fiscal year settings

The fiscal year settings in Salesforce can be set by navigating to **Setup | Company Profile | Fiscal Year**.

Standard fiscal years

By default, the fiscal year settings in Salesforce use the Gregorian calendar year (a 12-month structure) starting from January 1 and ending on December 31. If your organization follows the 12-month structure, you can use the standard fiscal years. Standard fiscal years can start on the first day of any month, and you can specify whether the fiscal year is named for the starting or ending year. For example, if your fiscal year starts in April 2015 and ends in March 2016, your fiscal year setting can be either 2015 or 2016.

Custom fiscal years

If your fiscal year is more complicated than this, you can define these periods using custom fiscal years. For example, as part of a custom fiscal year, you can create a 13-week quarter represented by three periods of 4, 4, and 5 weeks instead of calendar months.

If you use a fiscal year structure such as a 4-4-5 or a 13-period structure, you can define a fiscal year by specifying a start date and an included template. If your fiscal year structure is not included in the templates, you can modify a template. For example, if you use three fiscal quarters per year (a trimester) instead of four, delete or modify the quarters and periods to meet your needs. These custom fiscal periods can be named based on your standards. For example, a fiscal period can be called P12 or December.

Fiscal years can be modified any time you need to change their definition. For example, an extra week can be added to synchronize a custom fiscal year with a standard calendar in a leap year. Changes to the fiscal year structure take effect immediately upon being saved.

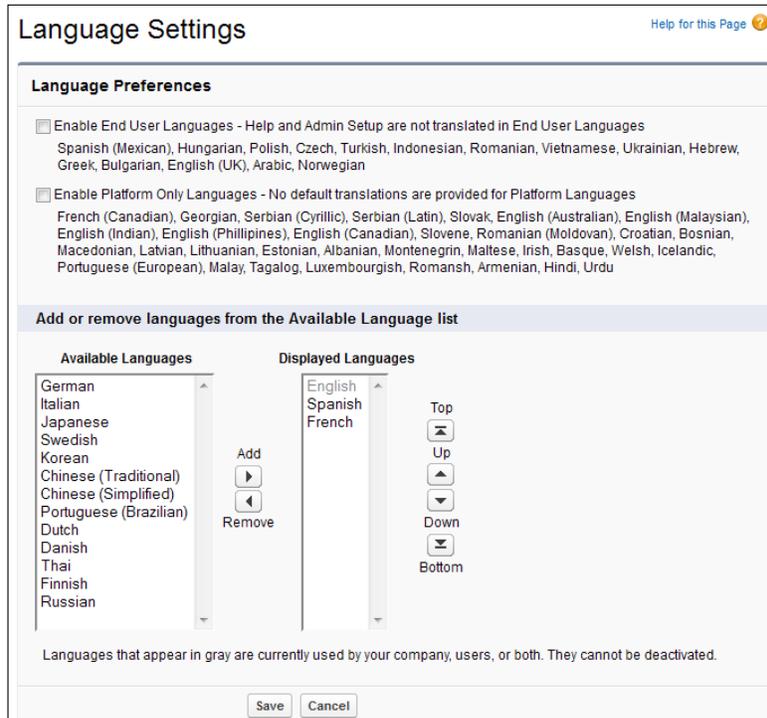
Language Settings

The **Language Settings** feature allows you to specify the acceptable languages that can be used within the Salesforce CRM application.

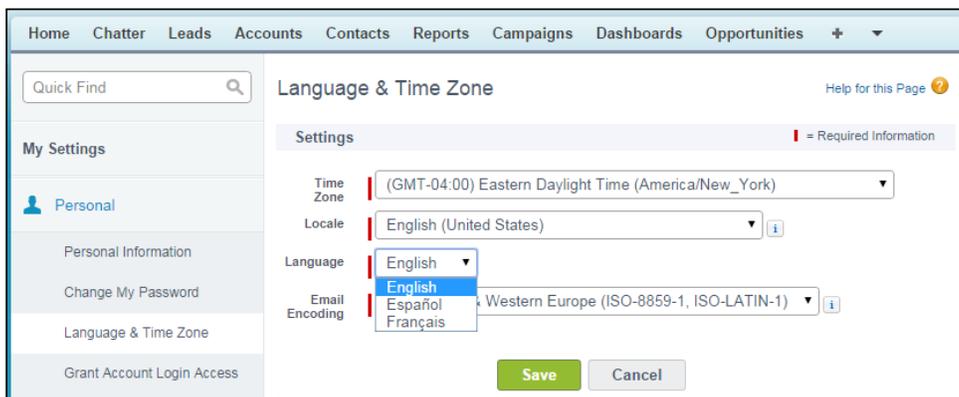
This feature can be set by navigating to **Setup | Company Profile | Language Settings**.

You then choose the languages that you want to make available to users by selecting them from the **Available Languages** list and then clicking on **Add**.

In the following example, we have added **Spanish** and **French** along with **English**, and these appear in the **Displayed Languages** list, as shown in the following screenshot:



The languages that appear in the **Displayed Languages** list are now shown as available options in the **Language** picklist section in the user's **Personal Settings** page, as shown in the following screenshot:

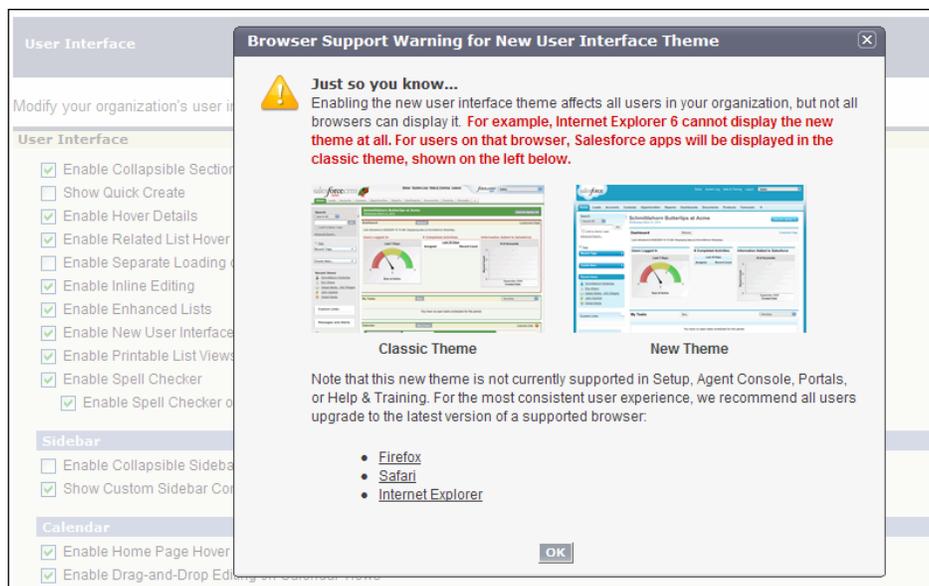


User interface and supported browsers

Salesforce currently has two user interface themes: **Classic Theme** and **New Theme**. Starting with the Summer 2010 edition (released in June 2010), all new organizations are enabled with the new user interface theme by default.

User interface

All screenshots and setups in this book have been undertaken using the new user interface theme. The difference in themes can be seen in the following screenshot that appears when you attempt to switch from **Classic** to **New Theme** (described shortly in this section):



Not only does the new user interface theme change the look and feel of Salesforce, but it might also position some key links such as **Setup** and **Logout** under the user name for each user in your organization.



The new user interface theme is seen only by users with supported browsers. This is discussed in detail later in the *Supported browsers* section. Some newer functional areas are dependent on **New Theme** and cannot be provided when **Classic Theme** is activated, such as Chatter (a collaboration application suite). Therefore, to enable Chatter, you must first activate **New Theme**.

Supported browsers

The following browsers are supported by Salesforce:

- Microsoft® Internet Explorer® Versions 7, 8, 9, 10, and 11
- Mozilla® Firefox® – the most recent stable version
- Google Chrome™ – the most recent stable version
- Apple® Safari® Versions 5.x and 6.x on Mac OS X



Starting from the Summer 2015 release, Salesforce will discontinue browser support for Microsoft® Internet Explorer® Versions 7 and 8.

Along with the user interface theme, there are many other aspects of the user interface that can be set up in Salesforce to present an optimal user experience for the users in your organization.

Additional user interface options include **User Interface** settings (such as **Collapsible Sections** and **Inline Editing**); **Sidebar** settings (**Collapsible Sidebar** settings and **Custom Sidebar Components on All Pages**); and **Calendar** settings (such as **Home Page Hover Links for Events** and **Drag-and-Drop Editing on Calendar Views**).

There are also some administrator-specific settings that can improve your experience with the application located under the **Setup** settings. This also includes the **Enhanced Page Layout Editor** and **Enhanced Profile List Views** settings.

The selection of the **User Interface** option can be carried out by navigating to **Setup** | **Customize** | **User Interface**.



The **User Interface** option is the final option in the **Customize** section on the left-hand setup sidebar.

The **User Interface** screen is presented as shown in the following screenshot:

User Interface [Help for this Page](#)

Modify your organization's user interface with the following settings:

User Interface

- Enable Collapsible Sections
- Show Quick Create
- Enable Hover Details
- Enable Related List Hover Links
- Enable Separate Loading of Related Lists
- Enable Inline Editing
- Enable Enhanced Lists
- Enable New User Interface Theme

⚠ Some Salesforce features like Chatter need the new user interface theme. Disabling the theme disables Chatter.

- Enable Tab Bar Organizer
- Enable Printable List Views
- Enable Spell Checker
 - Enable Spell Checker on Tasks and Events
- Enable Customization of Chatter User Profile Pages [i](#)
- Enable Salesforce Notification Banner

Sidebar

- Enable Collapsible Sidebar
- Show Custom Sidebar Components on All Pages

Calendar

- Enable Home Page Hover Links for Events
- Enable Drag-and-Drop Editing on Calendar Views
 - Enable Click-and-Create Events on Calendar Views
 - Enable Drag-and-Drop Scheduling on List Views
- Enable Hover Links for My Tasks list

Setup

- Enable Enhanced Page Layout Editor
- Enable Enhanced Profile List Views
- Enable Enhanced Profile User Interface
- Enable Streaming API
- Enable Custom Object Truncate
- Enable Improved Setup User Interface [i](#)
- Enable Advanced Setup Search (Beta) [i](#)

User interface settings

In the following sections, we will look at the various user interface settings. Let's look at them one by one.

The Enable Collapsible Sections option

Collapsible sections enable your users to collapse or expand sections on record detail pages using the arrow icon next to the section heading. Sections remain expanded or collapsed until the user changes their settings for that section. Salesforce will store a different setting for each record type if the record types have been set up as shown in the following screenshot:

The screenshot shows an 'Opportunity Detail' record page. At the top right are buttons for 'Edit', 'Delete', and 'Clone'. The record details include: Opportunity Owner (Trevor Howard [Change]), Private (checkbox), Opportunity Name (Opportunity Y), Account Name (Company X), and Type. Below these are two sections: 'Section One' and 'Section Two'. 'Section One' is expanded, showing a 'Hide Section - Section One' button, 'Pipeline', and 'Primary Campaign Source' (Widget World Campaign). 'Section Two' is collapsed.

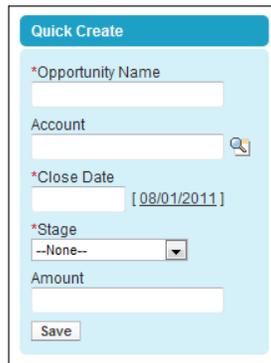
 When enabling collapsible sections, you need to ensure that the section headings have been entered on the page layouts.]

Clicking on the triangle icon toggles between showing and hiding the section, as shown in the following screenshot:

This screenshot shows the same 'Opportunity Detail' record page as above. In this view, 'Section One' is collapsed, and a 'Show Section - Section One' button is visible next to the section heading. 'Section Two' remains collapsed.

The Show Quick Create option

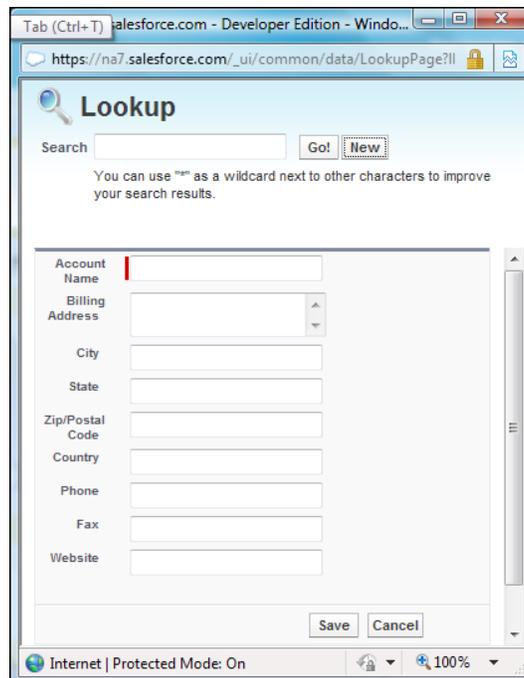
The **Show Quick Create** option adds the **Quick Create** fields section to the sidebar on a **Record** tab page to enable users to create a new record using minimal data fields, as shown in the following screenshot:



The screenshot shows a 'Quick Create' form with the following fields and controls:

- *Opportunity Name**: A text input field.
- Account**: A text input field with a magnifying glass icon for lookup.
- *Close Date**: A date input field with a calendar icon, showing the date [08/01/2011].
- *Stage**: A dropdown menu with the selected value '--None--'.
- Amount**: A text input field.
- Save**: A button at the bottom of the form.

The **Show Quick Create** option also controls whether users can create new records from within the lookup dialogs. With the setting enabled, users see a **New** button in the lookup dialog screen. The following example shows the creation of a new account within the account lookup dialog while working with an opportunity record:



The screenshot shows a 'Lookup' dialog for accounts. It includes a search bar with a 'Go!' button and a 'New' button. Below the search bar, there is a list of account fields for data entry:

- Account Name
- Billing Address
- City
- State
- Zip/Postal Code
- Country
- Phone
- Fax
- Website

At the bottom of the dialog, there are 'Save' and 'Cancel' buttons. The browser window title is 'Tab (Ctrl+T) | salesforce.com - Developer Edition - Windo...' and the URL is 'https://na7.salesforce.com/_ui/common/data/LookupPage?ll'. The status bar at the bottom shows 'Internet | Protected Mode: On' and '100%' zoom.

Clicking on the **New** button reveals the fields that are available in order to create the new record.

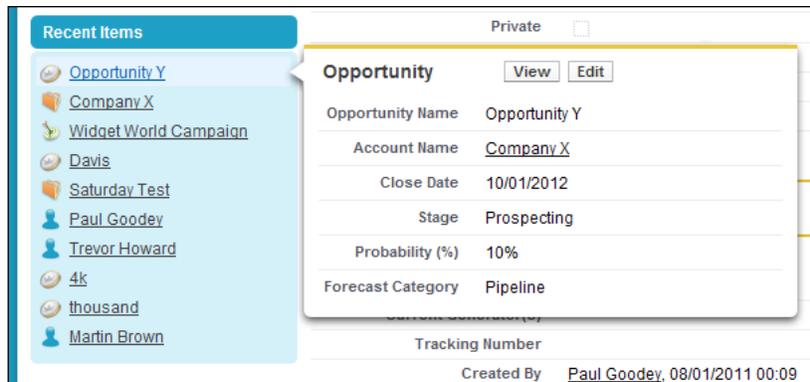
The option to create new records and the display of the **New** button in the lookup dialog is only available for accounts and contacts. Also, users still need the appropriate create user profile permission to enter data with **Quick Create** irrespective of whether the entry fields are displayed.

The Enable Hover Details option

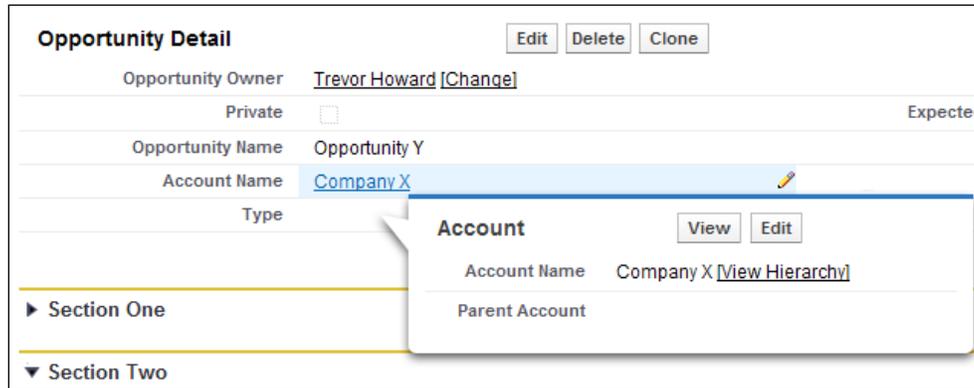
The **Enable Hover Details** option allows users to view interactive information for a record by hovering the mouse pointer over a link to that record in the **Recent Items** list on the sidebar or in a lookup field on the record detail page. The fields displayed in the hover details are determined by the record's mini page layout that is set at the page layout edit screen.

 The **Enable Hover Details** option is selected by default. 

In the following screenshot, we are hovering the mouse pointer over a link to a record in the **Recent Items** list on the sidebar:



In the following screenshot, we are hovering the mouse pointer over a lookup field on the record detail page:



To view the hover details for a record, users require the appropriate share access to the record and field-level security to the fields in the mini page layout, which is set at the page layout edit screen (see *Chapter 3, Configuration in Salesforce CRM*).

The Enable Related List Hover Links option

The **Enable Related List Hover Links** option enables related list hover links to be displayed at the top of standard and custom object record detail pages. It allows users to view the related list and its records by hovering the mouse pointer over the related list link. Users can also click on the related list hover link to jump down directly to the **Related List** section without having to scroll down the page.



The **Enable Related List Hover Links** option is selected by default.

The Enable Separate Loading of Related Lists option

The **Enable Separate Loading of Related Lists** option enables the separate loading of record detail pages. First, the primary record detail data loads, and then the related list data loads. This option serves to improve display performance for organizations with a large number of related lists on record detail pages. When the page is loaded, the record details are displayed immediately; afterwards, the related list data loads, during which the users see a progress indicator for the related list.

You will see that the related list sections are not loaded yet. They appear as [...] while the primary record detail (for the account example) is loaded immediately, as follows:



After the primary record detail has loaded (the account page), the related lists are then loaded. You can see that the number of records for the **Contacts** related list is now displayed as [2].



This option does not apply to pages for which you cannot control the layout (such as user pages or Visualforce pages).

 The **Enable Separate Loading of Related Lists** option is disabled by default.

The Enable Inline Editing option

The **Enable Inline Editing** option allows users to change field values directly within the record detail page, avoiding the need to load the record edit page first. By double-clicking on the field to be edited within the detail page, the field changes and becomes editable. The new value can then be entered and saved, or the action can be undone using the Undo button.

First, the field is highlighted by hovering over it with the mouse to reveal the pencil icon, indicating that the field is editable, as follows:

Industry	
Annual Revenue	\$200,000 
SF Account Number	SFA-000032

Then, double-clicking on the field causes the field to switch from view mode to edit mode to allow a new value to be entered, as follows:

Industry	
Annual Revenue	<input type="text" value="200,000"/>  
SF Account Number	SFA-000032

After a new value has been entered, the value is displayed in orange text and the user has the option to undo the change using the undo button, as follows:

Industry	
Annual Revenue	350,000  
SF Account Number	SFA-000032

The changed value and the detail page can then be saved in the standard way using the **Save** button, as follows:

Account Detail		Save	Cancel
Account Owner	Paul Goodey [Change]		
Account Name	Company X [View Hierarchy]		
Parent Account			
Account Number			
Account Site			
Type			
Industry			
Annual Revenue	350,000 		
SF Account Number	SFA-000032		



To check whether inline editing is enabled for your organization and to discover which value can be edited, you can hover over a value with your mouse and note the following result:

- A field that is editable will have a pencil icon to the far right of the value when the mouse is hovered over it
- A field that is non-editable will have a padlock icon to the far right of the value when the mouse is hovered over it.

This option is enabled by default. Certain fields cannot be changed using inline editing, such as system fields (created by, last modified by, and so on), calculated fields (formula, auto number, roll-up summary, and so on), read-only Fields, and special fields (such as owner and record type).

 Also, fields on detail pages for documents and forecasts are not currently editable using inline editing.

The Enable Enhanced Lists option

The **Enable Enhanced Lists** option provides users with the ability to view, customize, and edit list data, which is the resulting data section that is rendered from **Views**.

When enabled along with the Enable Inline Editing setting, users can also edit records directly within the list without having to move away from the page, as shown in the following screenshot:



Action	Opportunity Name	Account Name	Amount ↑	Close Date	Stage
Edit Del	Opportunity Y	Company X	\$1,000.00	10/01/2012	Prospecting
Edit Del	Test	Westwood	\$110,000.00	06/12/2012	Prospecting
10			\$20,000,000.00	23/12/2011	Prospecting
			\$100,000,000.00	04/01/2011	Prospecting

With enhanced lists enabled, users can perform the following actions:

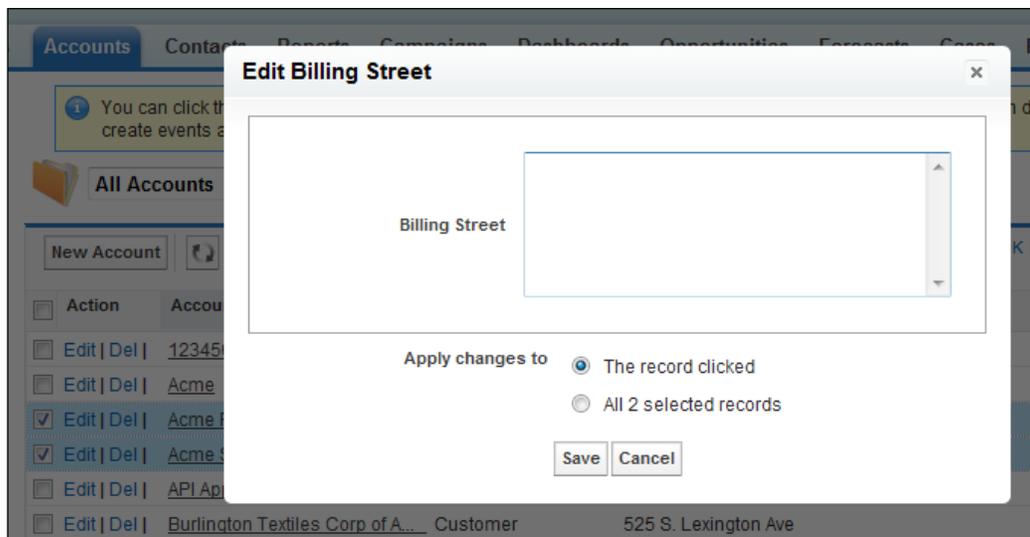
1. Create a new view or edit, delete, or refresh the existing view.
2. Navigate through the list results by clicking on the first, previous, next, and last page links at the bottom of the list. You can jump directly to a specific results page by entering a number in the textbox in the lower-right corner. You can also change the width of a column by dragging the right-hand side of the column heading with the mouse. Changes made to column widths apply to that specific list only and are recalled whenever that list is viewed. Please note that, when columns are added or removed from a list, any column width setting for that list is discarded.

3. Change the order in which a column is displayed by dragging the entire column heading with your mouse to the desired position. For users who have the permission to edit the list definition, the changes are saved for all who see the list. For users who do not have permission to edit the list definition, their changes are discarded after leaving the page.
4. If inline editing is enabled for your organization, values can be entered directly into the list by double-clicking on individual field values. Users who have been granted the **Mass Edit from Lists** option on their profile can edit up to 200 records at a time.

 The **Mass Edit from Lists** option only appears on the profile if inline editing is enabled.

A mass edit is performed by first selecting the records to be edited using the checkboxes and then clicking on one of the fields that are to be edited.

Upon clicking on the field, a new pop-up window is displayed, which prompts whether the change is to be made to just the selected record or to all the records that have been selected. In the following screenshot, we see an example where two account records have been selected and where one of the record's billing street fields has been clicked on. This feature only allows mass edit; users cannot mass delete.

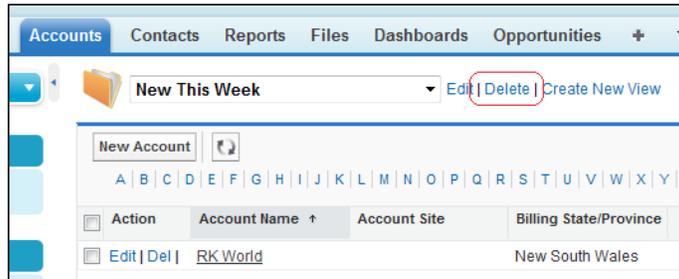


Remind users that they cannot mass delete records



As a system administrator, you might need to remind users that they cannot mass delete records as, occasionally, users might try to mass delete using the only visible **Delete** link, which is, in fact, the link to delete **View**, as shown in the upcoming screenshot.

Hopefully, communication of this fact will save you from having to recreate any views that have been deleted due to an error.



In the **Account**, **Contact**, and **Lead List** views, there is an **Open Calendar** link at the bottom of the page that displays a weekly view of a calendar underneath the list. A record can be dragged from the list to a time slot in the calendar to create an event associated with the record.



To perform inline editing on an enhanced list, **Advanced Filter** options must be turned off in the list view filter criteria.

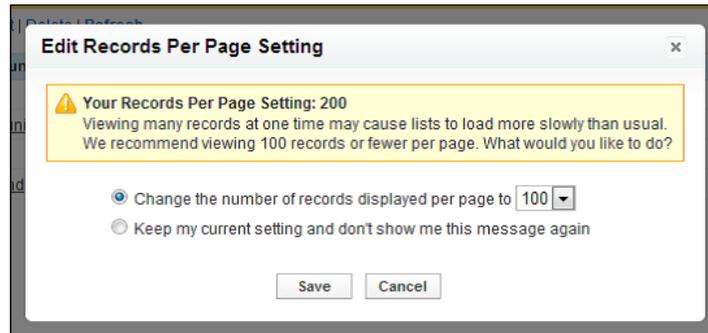
Some standard fields do not support inline editing. For example, **Case Status**, **Opportunity Stage**, and several of the **Task** and **Event** fields can only be edited from the record edit page.

The number of records displayed can be changed per page by setting the view for **10**, **25**, **50**, **100**, or **200** records at a time. When this setting is changed, navigation is set to the first page of list results, as shown in the following screenshot:

Action	Opportunity Name	Account Name	Amount	Close Date	Stage	Oppo
Edit Del +	Test	Westwood	\$1,330,000.00	31/07/2014	Proposal/Price Quote	thow
Edit Del +	20 Thousand	Company X	\$100,000.00	31/07/2014	Prospecting	thow
Edit Del +	4k		\$100,000,000.00	31/07/2014	Prospecting	thow
Edit Del +	Opportunity Y	Company X	\$200,000.00	31/07/2014	Proposal/Price Quote	thow
Edit Del +	Product 101		\$10.00	31/07/2014	Prospecting	thow
Edit Del +	500k		\$600,000.00	31/07/2014	Qualification	thow
Edit Del ✓	Test	Company X	\$120,000.00	27/09/2011	Proposal/Price Quote	PGood
Edit Del +	Test Move	Contacts First Acco...		31/08/2011	Qualification	PGood
Edit Del +	Payment_RUS			09/08/2011	Needs Analysis	PGood
Edit Del +	MM Test	Six Mile Quarry	\$130,000.00	08/08/2011	Id. Decision Makers	PGood

If users change the number of records to be displayed per page, that setting is applied to all the lists (not just the current list).

Also, if the option of displaying 200 records is selected, a warning message appears as it can reduce performance, as shown in the following screenshot:



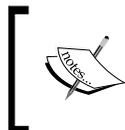
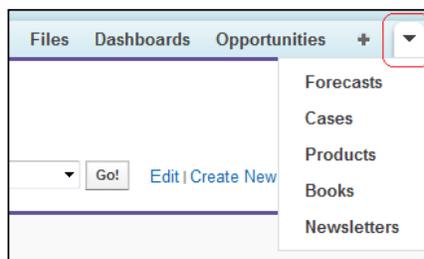
The Enable New User Interface Theme option

The **Enable New User Interface Theme** option changes the look and feel of Salesforce from the classic theme to the new theme. It also houses links, such as **Setup**, **Developer Console**, and **Logout**, under the username for users in your organization.

There are still some older browsers (such as IE 6) that cannot render the new user interface theme and should be avoided.

The Enable Tab Bar Organizer option

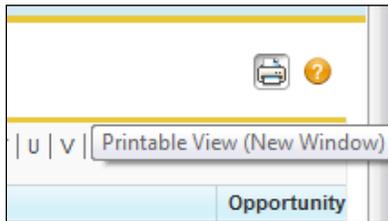
The **Enable Tab Bar Organizer** option automatically arranges users' tabs in the tab bar to control the width of the CRM application pages and prevent horizontal scrolling. It dynamically measures how many of the application tabs can be displayed and puts tabs that extend beyond the browser's current width into a drop-down list that is presented on the right-hand side of the tab bar, as shown in the following screenshot:



This setting is only enabled when **New User Interface Theme** is activated. If your organization is not using the New User Interface Theme, you can enable the feature, but the Tab Bar Organizer will not be activated for your users until the new theme is also enabled.

The Enable Printable List Views option

The **Enable Printable List Views** option allows users to easily print list views.



If enabled, users can click on the **Printable View** link (the printer logo), located in the top-right corner on any list view, to open a new browser window. Within the new window, the current list view is displayed in a print-ready format, as shown in the following screenshot:

 A screenshot of a print-ready Salesforce list view. The page header includes the Salesforce logo and the text 'Success On Demand'. In the top right corner, there are links for 'Close Window' and 'Print This Page'. The main content area shows the title 'US Opportunities' and 'Displaying records 1 - 4'. A dropdown menu for 'Number of records' is set to '4'. Below this is a table with the following data:

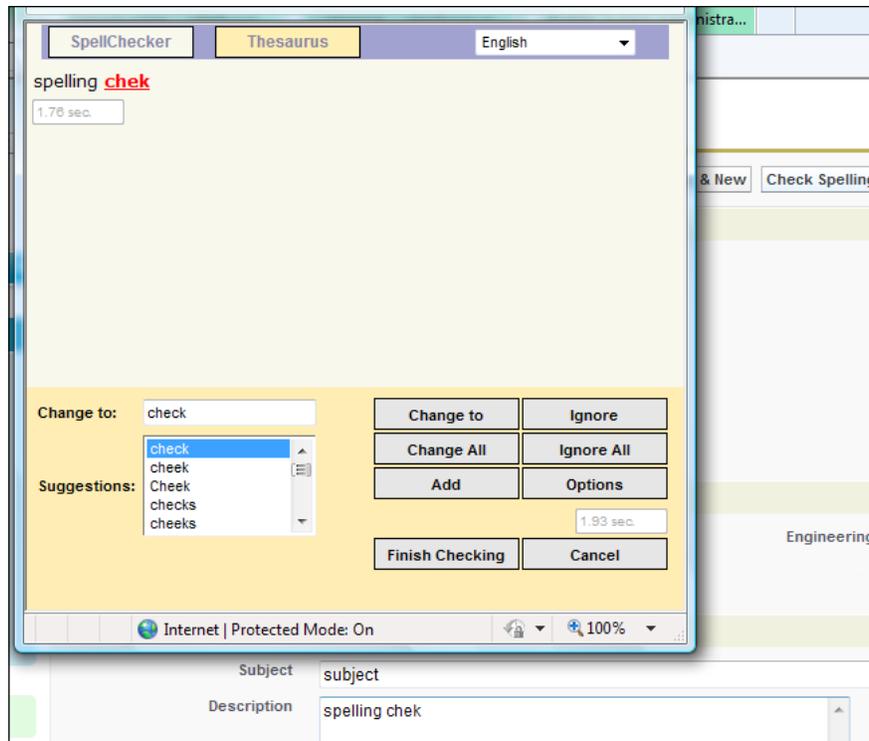
Opportunity Name ↑	Account Name	Amount	Close Date	Stage	Opportunity Owner Alias
4k		\$100,000,000.00	04/01/2011	Prospecting	jsmit
Opportunity Y	Company X	\$1,000.00	10/01/2012	Prospecting	jsmit
Test	Westwood	\$110,000.00	06/12/2012	Prospecting	jsmit
thousand		\$20,000,000.00	23/12/2011	Prospecting	jsmit

 At the bottom of the page, there is a copyright notice: 'Copyright © 2000-2011 salesforce.com, inc. All rights reserved.'

This option allows users to click on the **Printable View** link from any list view; this opens a new browser window that displays the current list view in a print-ready format.

The Enable Spell Checker option

When the **Enable Spell Checker** option is selected, the **Check Spelling** button appears in certain areas of the application where text is entered, such as sending an e-mail or when creating cases, notes, and solutions. Clicking on this button checks the spelling of your text, as shown in the following screenshot:



 The **SpellChecker** option is not supported for all languages in Salesforce and does not appear where the language is, for example, Thai, Russian, Japanese, Korean, or Chinese.

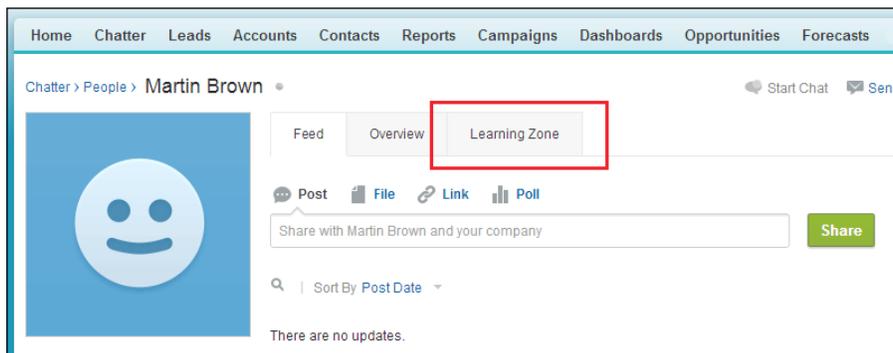
The Enable Spell Checker on Tasks and Events option

The **Enable Spell Checker on Tasks and Events** option enables the appearance of the **Check Spelling** button when users create or edit tasks or events. Spelling is checked in the **Description** field for events and the **Comments** field for tasks.

The Enable Customization of Chatter User Profile Pages option

The **Enable Customization of Chatter User Profile Pages** option allows you to customize the tabs on the Chatter user profile. The way to customize Chatter user profile pages is described in detail later in *Chapter 7, Salesforce CRM Functions*.

In the following screenshot, we have customized the Chatter User Profile Page tabs and added the **Learning Zone** tab, which results in the modified page shown in the following screenshot:



[ This feature was automatically enabled in Winter 2014.]

This enables you to add custom tabs or remove default tabs such as the **Feed** and **Overview** tabs. Custom tabs are available by customizing Subtab Apps, which are described in more detail in *Chapter 3, Configuration in Salesforce CRM*. If this option is disabled, users only see the **Feed** and **Overview** default tabs.

The Enable Salesforce Notification Banner option

When the **Enable Salesforce Notification Banner** option is selected, an announcement banner appears on certain pages.

[ In the Summer 2014 release, the Salesforce Notification Banner will appear in the setup area for your organization and on pages for accounts, contacts, and dashboards.]

Your users can exclude the banner from all pages by clicking on the **Close** button, or you can prevent the Salesforce Notification Banner from appearing for your entire organization by disabling this option.

Sidebar

The following options are available to help users view and edit information on the sidebar that is presented on the left-hand side vertical section of the screen:

- **Enable Collapsible Sidebar**
- **Show Custom Sidebar Components on All Pages**

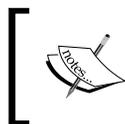
We will now cover the Sidebar options in detail.

The Enable Collapsible Sidebar option

The collapsible sidebar gives users the ability to show or hide the sidebar on every Salesforce page where the sidebar is included. When the **Enable Collapsible Sidebar** option is selected, the collapsible sidebar becomes available to all users in your organization. However, each user can set their own preference for displaying the sidebar. Users can set the sidebar to be permanently displayed, or they can collapse the sidebar and show it only when needed.

The Show Custom Sidebar Components on All Pages option

If you have custom home page layouts that include components in the sidebar, the **Show Custom Sidebar Components on All Pages** option displays the sidebar components on all pages in Salesforce and for all users. If only certain profiles are allowed to view sidebar components on all pages, you can assign a **Show Custom Sidebar on All Pages** permission to just those profiles.



If the Show Custom Sidebar Components on All Pages user interface setting is enabled, the Show Custom Sidebar on All Pages permission is not available within the profile permissions.

Calendar settings

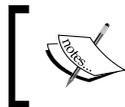
The following options are available to help users view and edit information on calendar sections and views:

- **Enable Home Page Hover Links for Events**
- **Enable Drag-and-Drop Editing on Calendar Views**
- **Enable Click-and-Create Events on Calendar Views**
- **Enable Drag-and-Drop Scheduling on List Views**
- **Enable Hover Links for My Tasks List**

Let's see what they are in detail.

The Enable Home Page Hover Links for Events option

The **Enable Home Page Hover Links for Events** option enables hover links in the calendar section of the **Home** tab and allows users to hover the mouse over the subject of an event to see interactive information for that event.



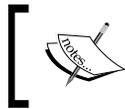
This setting controls the **Home** tab only, as hover links are always displayed in other calendar views. Also, this option is enabled by default.

The Enable Drag-and-Drop Editing on Calendar Views options

The **Enable Drag-and-Drop Editing on Calendar Views** option enables your users to drag-and-drop existing events around their daily and weekly calendar views to reschedule events without having to navigate from the page to the event creation page. The loading performance of the calendar control might suffer with this option enabled. Drag-and-drop editing is not available for either multiday events or on console calendar views. Also, this option is enabled by default.

The Enable Click-and-Create Events on Calendar Views option

The **Enable Click-and-Create Events on Calendar Views** option enables the creation of events on daily and weekly calendar views by double-clicking on a specific time slot and entering the details of the event in an interactive section. The fields presented in the interactive section are set using the mini page layout on the **Event** page layout screen.



Recurring events and multiperson events cannot be created using the **Click-And-Create Events On Calendar Views** option.

The Enable Drag-and-Drop Scheduling on List Views option

The **Enable Drag-and-Drop Scheduling on List Views** option enables users to create events by dragging the record to be linked from the list view to the weekly calendar view. Upon dropping, an interactive section for the event detail is displayed where the available fields are set using the mini page layout.



This option is disabled by default.

The Enable Hover Links for My Tasks List option

The **Enable Hover Links for My Tasks List** option enables hover links for tasks in the **My Tasks** section of the **Home** tab and on the calendar day view, and allows users to hover the mouseover details of the task in an interactive section.

Setup settings

There are administrator-specific user interface settings that can improve your experience with the application and that are located under the **Setup** settings for the following options:

- **Enable Enhanced Page Layout Editor**
- **Enable Enhanced Profile List Views**
- **Enable Enhanced Profile User Interface**
- **Enable Streaming API**

- **Enable Custom Object Truncate**
- **Enable Improved Setup User Interface**
- **Enable Advanced Setup Search**

Let's see what these settings are in detail.

The Enable Enhanced Page Layout Editor option

The **Enable Enhanced Page Layout Editor** option enables the Enhanced Page Layout Editor for your organization, so you can edit page layouts with a feature-rich **What You See Is What You Get (WYSIWYG)** editor.

The Enable Enhanced Profile List Views option

The **Enable Enhanced Profile List Views** option enables the enhanced list views and inline editing on the profiles list page, which allows you to manage multiple profiles at once.

To go to the **Profile** menu, navigate to **Setup | Manage Users | Profiles**. Now, select a profile and click on **Create New View**, as shown in the following screenshot:

<input type="checkbox"/>	Action	Profile Name ↑	User License
<input type="checkbox"/>	Edit Clone	Authenticated Website	Platform Portal
<input type="checkbox"/>	Edit Clone	Chatter Free User	Chatter Free
<input type="checkbox"/>	Edit Clone	Chatter Moderator User	Chatter Free
<input type="checkbox"/>	Edit Clone	Contract Manager	Salesforce

The following are the three steps to produce the list of profiles that allow you to modify multiple profile settings at once:

1. Enter the view name.
2. Specify the filter criteria
3. Select the columns to be displayed.

The following screenshot shows the three steps used to create a new view for profiles:

Profiles
Create New View

Save Save As Delete Cancel

Step 1. Enter View Name
View Name: My Profile List for Lead Conversion

Step 2. Specify Filter Criteria
Clear All Rows
Setting: Convert Leads Operator: equals Value: True
Add Row
Examples: Modify All Data equals False, Contact: Modify All equals True

Step 3. Select Columns to Display
Specify the columns to show in the list view. To set the columns, you can add profile details, user permissions, and object-level

Search: All Find

Available Settings: Created By, Created By Alias, Created Date, Custom, Description
Selected Settings: Profile Name, Convert Leads, Last Modified By, Last Modified Date, User License
Top Up

Now that the profile view has been created, we can select multiple profiles to manage all at once, as shown in the following screenshot:

Profiles
My Profile List for Lead Conversion New Profile

Create New View | Edit | Delete | Refresh

Action	Profile Name ↑	Convert Leads
Edit Clone	Contract Manager	✓
Edit Del Clone	Custom: Marketing Profile	✓
<input checked="" type="checkbox"/> Edit Del Clone	Custom: Sales Profile	✓
<input checked="" type="checkbox"/> Edit Del Clone	Custom: Support Profile	✓
Edit Clone	Marketing User	✓
Edit Clone	Partner User	✓
Edit Clone	Solution Manager	✓
Edit Clone	Standard User	✓
Edit Del Clone	System Admin Custom	✓
Edit Clone	System Administrator	✓

1-10 of 10 2 Selected

You can display multiple lists of profiles that can be selected and actioned upon, as shown in the following screenshot:

You can also modify multiple profile selections to apply the setting to all the profiles, as shown in the following screenshot:

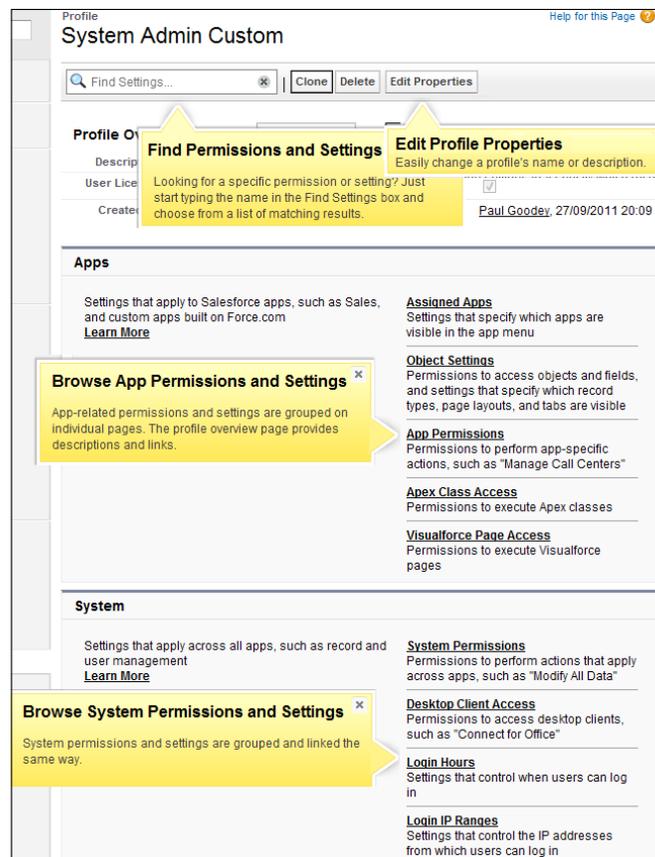
Action	Profile Name ↑	Convert Leads
Edit Clone	Contract Manager	✓
Edit Del Clone	Custom: Marketing Profile	✓
Edit Clone	Marketing User	✓
Edit Clone	Partner User	✓
Edit Clone	Solution Manager	✓
Edit Clone	Standard User	✓
Edit Del Clone	System Admin Custom	✓
Edit Clone	System Administrator	✓

The **Advanced** settings of **User Interface** set up the screen that is currently related to the **Extended Mail Merge** features.

The Enable Enhanced Profile User Interface option

The **Enable Enhanced Profile User Interface** option allows you to enable the Enhanced Profile User Interface, which then offers the following features to help you:

- **Find permissions and settings:** With this, you can start typing a specific permission or setting name in the find settings box and then choose from a list of matching results.
- **Edit profile properties:** With this, you can change the name or description of a profile.
- **Assigned Users button:** You find out who belongs to a profile by clicking on this button to see a list.
- **Browse permissions and settings:** This is for both app and system properties. Here, the app-related and system permissions and settings are grouped on individual pages where the profile overview page provides the descriptions and links.



The Enable Streaming API option

The **Enable Streaming API** option enables the use of the Force.com Streaming API in your organization. The Streaming API provides near real-time streams of data from the Force.com platform. You can create topics with which applications that receive asynchronous notifications of changes to data in Force.com can subscribe.

 See the Force.com Streaming API Developer's Guide at <https://developer.salesforce.com> for more details.

The Enable Custom Object Truncate option

Select the **Enable Custom Object Truncate** checkbox to activate truncating custom objects, which permanently removes all of the records from a custom object while keeping the object and its metadata intact for future use.

 When this option is enabled, a **Truncate** button appears in the list of edit buttons within the custom object setup page.

Truncating custom objects is a quick way to permanently delete all of the records from a custom object, for example, if a custom object has been created and filled with test records. When testing is complete and the test data is no longer required, you can truncate the object to remove the test records but keep the object and make it ready to be deployed into production. This is quicker than batch-deleting records and recreating the custom object.

 Truncating a custom object permanently removes all of its records, and you cannot recover the records from **Recycle Bin**. A copy of the truncated object appears in the **Deleted Objects** list for 15 days, during which the object and its records continue to count toward the organization's data limits. The copied object and its records are then permanently deleted after 15 days.

The Enable Improved Setup User Interface option

When the improved setup user interface is enabled in an organization, you might notice several differences as compared to the original user interface.

The setup menu is accessed from the **Setup** link in the upper-right corner of any Salesforce page. It is arranged into the following goal-based categories:

- **Administer, Build, Deploy, Monitor, and Checkout**
- Personal settings, which all Salesforce users can edit, are available from a separate **My Settings** menu

 By enabling the **Enable Improved Setup User Interface** option, the improved Setup user interface is activated for every user in your organization.

The Enable Advanced Setup Search option

When enabled, the **Advanced Setup Search** option allows you to search for setup pages, custom profiles, permission sets, public groups, roles, and users from the sidebar search textbox within the setup area. When the option is disabled, you can search for setup pages only.

As you type in the sidebar Setup searchbox, any options that match your search term appear in the Setup menu. When you press *Enter*, you will be presented with a page that will list any matching permission sets, custom profiles, public groups, roles, or users.

Search overview

Salesforce.com uses custom algorithms that consider the following within searches:

- The search terms
- Ignored words in search terms (for example, the, to, and for)
- Search term stems (for example, searching for **speaking** returns items with **speak**)
- The proximity of search terms in a record
- Record ownership and most recently accessed records

A user might not have the same search results as another user performing the same search, because searches are configured for the user who is performing the search. For example, a user recently viewed a record, the record relevancy increases, and the record moves higher in their search results list. Records that are owned by the user also move higher in their search results. Currently, there are three types of search, and they are as follows:

- Sidebar search
- Advanced search
- Global search

Let's see what they are, shall we?

Sidebar search

From the sidebar search box, users can search a subset of record types and fields. Wildcards and filters can be used to help refine the search.

 A **wildcard** is a special character or token that can be used to substitute for any other character or characters in a string. For example, the asterisk character (*) is used to substitute zero or more characters. More information about the wildcard characters can be found at http://en.wikipedia.org/wiki/Wildcard_character

Advanced search

The advanced search in the sidebar allows you to search for a subset of record types in combination and offers more fields including custom fields and long text fields, such as descriptions, notes, tasks, and event comments. Wildcards and filters can be used to help refine the search.

Global search

From the global search box, users can search more types of records, including articles, documents, products, solutions, chatter feeds, and groups. Users can also search more fields, including custom fields and long text fields, such as descriptions, notes, tasks, and event comments. Wildcards and filters can be used to help refine the search.

 To enable global search, you must enable **Chatter**. If global search is enabled, sidebar search and advanced search are disabled. Global search is not supported in **Partner Portal** or **Customer Portal**. Only users with supported browsers can use global search, as it has indirect dependencies on the **New Theme** user interface.

Searching in Salesforce.com

Your search term must have two or more characters. Special characters, such as ", ?, *, (, and), are not included in the character count. For example, a search for m* will fail to return any search results.

Search terms are not case-sensitive. For example, a search for martin returns the same results as a search for Martin.

Finding phone numbers can be done by entering part or all of a number. For example, to find (512) 757-6000, enter 5127576000, 757, or 6000. To search for the last seven digits, you must enter any punctuation, such as 757-6000.

In Chinese, Japanese, and Korean, you can find a person by entering the last name before the first name; searching for howard trevor returns any person named Trevor Howard.

If you're using advanced search or global search, refine your search using operators such as AND, OR, and AND NOT.

If you're using advanced search or global search, search for exact phrases by selecting the **Exact phrase** checkbox or by putting quotation marks around multiple keywords; for example, "phone martin brown" returns results with phone martin brown, but not martin brown phoned or phone martina browning.

If you're using sidebar search, your search string is automatically treated as a phrase search.

Search for partially matching terms using wildcards as follows:



Asterisks match one or more characters in the middle or at the end (not the beginning) of your search term. For example, a search for brown* finds items that start with variations of the term brown, such as browning or brownlow. A search for ma* brown finds items with martin brown or mandy brown. If you're using sidebar search, an * symbol is automatically appended at the end of the search string.

If you're using global search, question marks match only one character in the middle (not the beginning or end) of your search term. For example, a search for ti?a finds items with the term tina or tika but not tia or tinas. Fields on custom objects are only searched if you have added a custom tab for the object.

If any using sidebar search or advanced search, question marks match only one character in the middle or end (not the beginning) of your search term.

Search settings

There are various search options that can be customized to change the way information can be searched by your users in Salesforce. These options either present enhanced search features that are visible as a part of the user interface or are nonvisible and used to optimize the search behind the scenes. The search settings can be set by navigating to **Setup | Customize | Search | Search Settings**.

The following screenshot shows you the search settings that are available if Chatter is not activated in your Salesforce CRM application:

Search Settings

[Help for this Page](#)

Modify your organization's search interface with the following settings:

Search Settings
Save Cancel

- Enable "Limit to Items I Own" Search Checkbox
- Enable Document Content Search
- Enable Search Optimization if your Content is Mostly in Japanese, Chinese, or Korean
- Use Recently Viewed User Records for Blank and Auto-Complete Lookups
- Enable Drop-Down List for Sidebar Search
- Enable Sidebar Search Auto-Complete
- Enable Single-Search-Result Shortcut for Sidebar and Advanced Search

Number of Search Results Displayed Per Object

Specify the number of records to display for each object on the Search Results page. The current setting is listed next to each object in parentheses. To make changes, select one or more objects, enter the new number of results per page, and click Save. The new value must be between 5 and 50.

Objects to update:

- Accounts (25)
- Activities (25)
- Activity Tracker (25)
- Assets (25)
- Attachments (25)
- Campaigns (25)
- Case Comments (25)
- Cases (25)
- Contacts (25)
- Contracts (25)

Results per page for selected objects:

Lookup Settings

Select the objects for which you want to enable the following features and click Save:

- Enhanced lookups provide an updated lookup dialog interface that gives users the ability to filter, sort, and page through results as well as customize columns.
- Lookup auto-completion displays suggestions from the Recent Items list as you type.

Enable	Enhanced Lookups	Lookup Auto-Completion
Accounts	<input type="checkbox"/>	<input type="checkbox"/>

By activating Chatter, the **Global Search** setting is automatically enabled and provides the following reduced set of options:

Search Settings Help for this Page ?

Modify your organization's search interface with the following settings:

Search Settings Save Cancel

- Enable "Limit to Items I Own" Search Checkbox
- Enable Document Content Search
- Enable Search Optimization if your Content is Mostly in Japanese, Chinese, or Korean
- Use Recently Viewed User Records for Blank and Auto-Complete Lookups

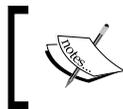
You have enabled Global Search and the following search settings no longer apply. To disable Global Search, you must disable Chatter on the [Chatter Settings](#) page.

- Enable Drop-Down List for Sidebar Search
- Enable Sidebar Search Auto-Complete
- Enable Single-Search-Result Shortcut for Sidebar and Advanced Search

In the upcoming sections, you will see how to work with various search settings.

The Enable "Limit to Items I Own" Search Checkbox option

The **Enable "Limit to Items I Own" Search Checkbox** option allows your users to restrict the search results to find only the records of which they are the record owner when searching in the sidebar.



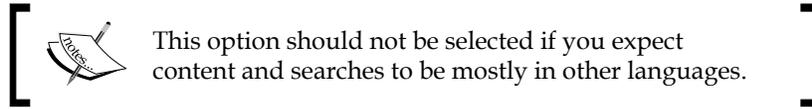
The **Limit to Items I Own** checkbox that is available for **Advanced Search** is always displayed regardless of this option setting.

The Enable Document Content Search option

The **Enable Document Content Search** option allows users to perform a full-text search of a document. When new documents are uploaded or an existing document is updated, its contents are available as search terms to retrieve the document.

The Enable Search Optimization if your Content is Mostly in Japanese, Chinese, or Korean option

The **Enable Search Optimization if your Content is Mostly in Japanese, Chinese, or Korean** option optimizes searching for Japanese, Chinese, and Korean language sets. It affects **Sidebar Search** and the account search for **Find Duplicates** on a lead record in **Sidebar Search** and **Global Search**.



The Use Recently Viewed User Records for Blank and Auto-Complete Lookups option

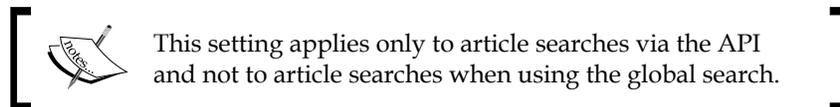
The **Use Recently Viewed User Records for Blank and Auto-Complete Lookups** option causes the list of records returned from a user autocomplete lookup and from a blank user lookup to be generated from the user's recently viewed user records. By not enabling this option, the dialog shows you a list of recently accessed user records from across your organization.

The Enable Drop-Down List for Sidebar Search option

The **Enable Drop-Down List for Sidebar Search** option causes a drop-down list in the **Search** section to appear; this allows users to limit searches by the type of record.

The Enable English-Only Spell Correction for Knowledge Search option

The **Enable English-Only Spell Correction for Knowledge Search** option is used with the **Articles** and **Article Management** tabs, in the articles tool in **Case Feed**, and in the **Salesforce Knowledge** sidebar in the **Salesforce** console.



When enabled, any search suggests and searches alternate spellings for English search terms.

The Enable Sidebar Search Autocomplete option

The **Enable Sidebar Search Autocomplete** option ensures that, when users start typing search terms, **Sidebar Search** displays a matching list of recently viewed records.



The global search feature includes autocomplete as a standard feature and does not require a specific autocomplete option to be set.

The Enable Single-Search-Result Shortcut option

The **Enable Single-Search-Result Shortcut** option allows users to skip the search results page and navigate directly to the record detail page if their search produces a single result.

The Number of Search Results Displayed Per Object option

The **Number of Search Results Displayed Per Object** option allows you to configure the number of items that are returned for each object in the **Search Results** page.

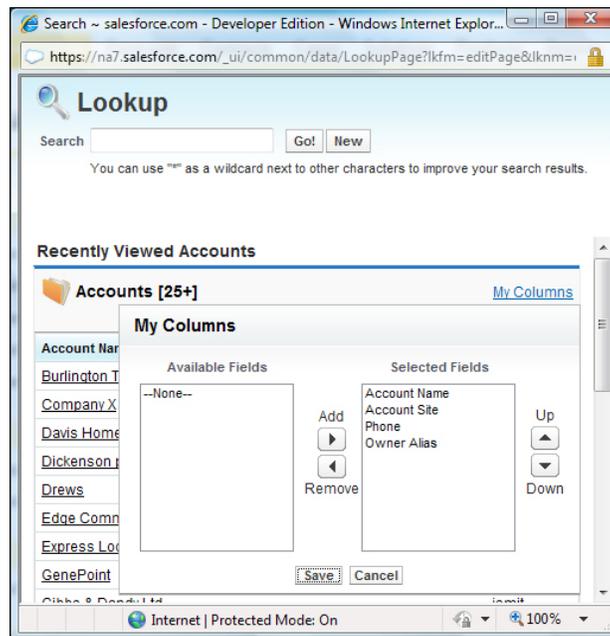
The current setting is in brackets next to each object where the new value must be between 5 and 50.

Lookup settings

The **Lookup Settings** section of the **Search Settings** page allows you to enable enhanced lookups and lookup autocomplete for **Accounts**, **Contacts**, **Users**, and custom objects.

Enhanced lookups

The **Enhanced Lookups** section provides an enhanced interface for your users to sort and filter search results by any field that is available in regular search results, as shown in the following screenshot:

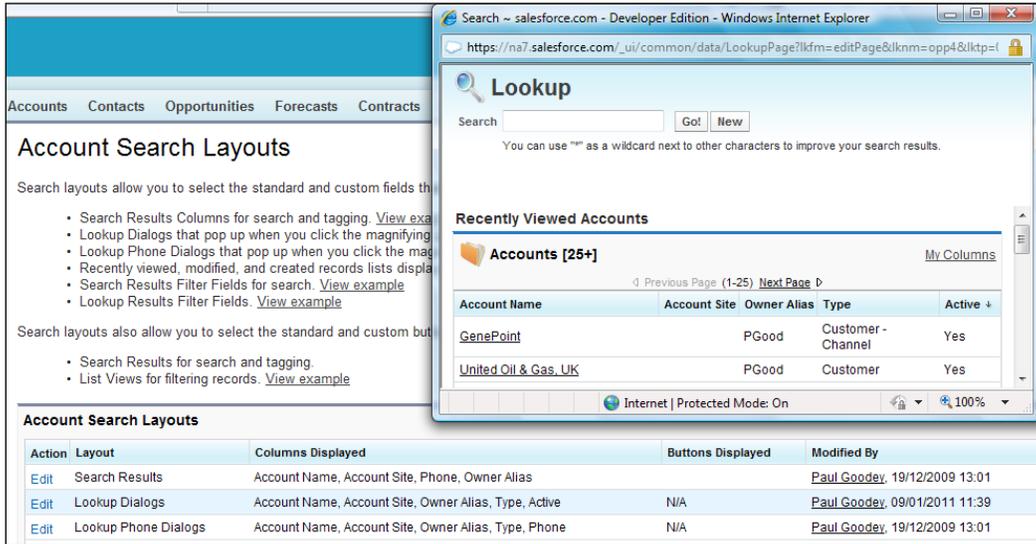


With enhanced lookups enabled, users can hide and reorganize the columns that are displayed in the results window. Enhanced lookups return all records that match the search criteria and allow you to scroll through large sets of search results.

After enabling enhanced lookups, you must specify which fields users can use to filter lookup search dialog results. This is set by accessing search layouts and choosing the fields from the **Lookup Dialog Fields** layout.

For custom objects, this is done by navigating to **Setup | Create | Objects**. Choose the object you want to modify, scroll down to the **Search Layouts** related list, and choose the fields from **Lookup Dialog Fields**.

For **Accounts**, **Contacts**, or **Users**, this is done by navigating to **Setup | Customize**; go to **Accounts**, **Contacts**, or **Users**, and then go to **Search Layouts**. Then, choose the fields from **Lookup** dialog fields, as shown in the following screenshot:



Currently, only **Accounts**, **Contacts**, **Events**, **Users**, **Chatter** objects, and custom objects can be enabled to use the enhanced lookup settings.

Lookup autocompletion

When the **Lookup Autocompletion** option is enabled, your users are shown a dynamic list of recently used matching records when they edit a lookup field.

 At the time of writing this feature is only available for **Accounts**, **Contacts**, **Events**, **Chatter**, **Users**, and custom object lookups.

Summary

This chapter looked at the mechanisms in place to help manage login access to the Salesforce CRM application and how organization-wide settings can be set to determine your company-specific information within Salesforce.com.

The options to set up and configure the look and feel of the application were identified along with details of the methods to search for information in Salesforce.

Notes and tips gained from the experience of Salesforce CRM system administration were outlined to help guide the understanding and improve the implementation of these features.

Having looked at these core customization feature sets, we will now look at how profiles and sharing in Salesforce CRM govern the functionalities and access permissions a user has throughout the application.

2

User Management in Salesforce CRM

In the previous chapter, we looked at user authentication and how user login access is authorized by the Salesforce application. We were introduced to the concept of a user being assigned a profile that could be set to control certain permissions. The user profile login permissions we looked at were restrictions on login hours and IP addresses, which allow you to control when and from where users log in to the Salesforce application.

In this chapter, we will look at how users can be managed in more detail and understand how some of the key profile settings are used within the Salesforce CRM application.

We will start to look into the ways in which a user's profile controls access to objects and also governs what features are available to that user.

Generally speaking, objects represent database tables that contain your organization's information and are discussed in detail in *Chapter 3, Configuration in Salesforce CRM*. For example, one of the key objects in the Salesforce CRM application represents account information.

Along with profiles, this chapter also begins to look at the concept of record sharing and provides a high-level look at sharing features within Salesforce. It also describes how these features control access to records for users.

The term **record** describes a particular occurrence of an object. A specific record could be American Express or Google, which is represented by an account object in our preceding example. We will now look at the following:

- An introduction to record ownership, profiles, and sharing
- Managing users in Salesforce

An introduction to record ownership, profiles, and sharing

Before looking at the features available to manage users, we start with a brief introduction to the concepts of record ownership, profiles, and sharing in Salesforce CRM.

Record owner

The record owner terminology is reflected throughout Salesforce and, for each and every data record, there can be one and only one record owner.

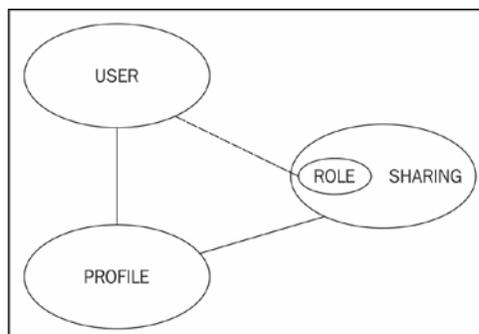
Only users that are active in Salesforce can have records assigned to them.

When a user is marked inactive in Salesforce CRM, he or she no longer has access to the application. However, any records that this inactive user owns remain in the application and continue to show the inactive user as the record owner.

The record owner setting generally determines whether access to that record is available to other users within the organization and is enabled using either profile or sharing settings.

Profiles and sharing

Profiles, sharing, and the optional role hierarchy setting work together and should be considered as a whole when setting up record ownership and data access for users. An overview of the relationship between users, profiles, and sharing settings can be pictured as follows:



All users in Salesforce must be assigned a profile. The profile is a control mechanism used to determine which functions the user can perform, which types of data they can access, and which operations they can carry out on that data.

All users are associated with sharing mechanisms in Salesforce; this determines the actual records the user can access. Controlling the level of record access can be achieved using options ranging from default sharing, which is set at the organization level, to role hierarchy and beyond using advanced sharing mechanisms. A user does not have to be assigned to a role in Salesforce.

The sharing rules are briefly outlined as follows and covered in far more detail later in this book.

Profiles

Some of the key controls of profiles are to identify the type of license specified for the user, any login hours or IP address restrictions, and control access to objects. If the appropriate object-level permission is not set on the user's profile, the user will be unable to access the records of that object type in the application.

Profiles never override your organization's sharing model or role hierarchy. For example, a profile might be set to allow a user access to create, edit, and delete leads. However, a user with this profile cannot edit or delete other users' leads if your organization's lead sharing model is read-only.

In *Chapter 3, Configuration in Salesforce CRM* we will look in detail at the features that the profile controls, including tabs, object-level security, field-level security, Apex/Visualforce page accessibility, console layout, application selections, and administrative and general user permissions.

There are two types of profile in Salesforce:

- Standard
- Custom

Here, each standard or custom profile belongs to exactly one user license type.

Standard profiles and custom profiles are similar in nature. The difference is that, for standard profiles, these types of settings cannot be applied: administrative permissions, general user permissions, object-level permissions, and, notably, the **Password Never Expires** setting, which means you are not required to change your password after a certain amount of time (this is part of the password policies that are described later). Hence, you must either create a custom profile or use a permission set (described later in this chapter) if you want to enable any of these features.

There are a number of standard profile types, such as:

- Contract manager
- Marketing user
- Solution manager
- Standard user
- System administrator

Contract manager

The contract manager profile is generally used to manage contracts and override forecasts.

Marketing user

The marketing user profile is generally used to manage campaigns, import leads, and manage public documents. Users with this profile have access to the same functions as standard user profiles.

Solution manager

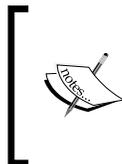
The solution manager profile is generally used to publish and review solutions. Users with this profile have access to the same functions as standard user profiles.

Standard user

The standard user profile is used to create and edit the main types of records. This profile also allows users to run reports and view the organization's setup. Notably, this profile can view, but not manage, campaigns. This profile can create, but cannot review, solutions.

System administrator

The system administrator profile is used to configure and customize the application. Users with this profile have access to all functionalities that do not require any additional licenses. For example, system administrators cannot manage campaigns unless they also have a marketing user license.



Standard profiles have their uses, but it is wise to limit their usage to cloning them to create custom profiles, as Salesforce has been known to change the settings for standard profiles when a new release is rolled out, which can result in an undesired outcome for any user assigned with that profile.

Sharing

Sharing settings control the default access for each object across the organization. Sharing rules per object can grant access beyond the default sharing settings; they cannot restrict access. The default sharing settings are as follows:

- **Controlled by Parent**
- **Private**
- **Public Read Only**
- **Public Read/Write**
- **Public Read/Write/Transfer**
- **Public Full Access**
- **Grant Access Using Hierarchies**

When the **Grant Access Using Hierarchies** setting is enabled, the role of the record owner determines visibility throughout the organization. Users in higher roles in the hierarchy will have full access (view/edit/delete) to all records owned by those at a lower level in the role hierarchy.

If **Grant Access Using Hierarchies** is not enabled, all roles are treated equally regardless of the hierarchy.



Grant Access Using Hierarchies is only applicable for custom objects as they cannot be disabled for standard objects.

Roles

Roles are the principal elements in sharing rules. Users can be grouped into roles based on their need to access data according to how they fit into the role hierarchy. Creating a role for every user's job title is not required.

Roles are accessed throughout the application and are particularly important for reporting. For instance, if you have two departments, Operations and Sales, you can run comparative reports for both roles.

Roles generally report to another role and are used to maintain the role hierarchy. They are a one-to-many hierarchical relationship with the hierarchy, allowing managers to see the data of the users who report to them. Users at any given role level are always able to view, edit, and report on all data owned by or shared with users below them in the hierarchy.

 You can create up to 500 roles for your organization. 

Role hierarchies do not need to specifically match your organization chart. Instead, each role in the hierarchy should represent a level of data access required by users.

Permission sets

Permission sets allow you to further control access to the system for the users in your organization. They can be considered as a method to fine-tune the permissions for selected individuals and enable access in a way similar to the setting up of profiles.

 Permission sets allow you to grant further access but not to restrict or deny access. 

While an individual user can have only one profile, you can assign multiple permissions and permission sets to users. For example, you can create a permission called *Convert Leads* that provides the facility to convert and transfer the leads and assign them to a user who has a profile, which does not provide lead conversion. You can create a permission called *Edit Contacts* and assign it to a user who has a profile that does not provide contact editing. You can also group these permissions into a permission set to create specific profile-like permissions without actually having to create or clone complete profiles, which is often unnecessary.

 You can create up to 1,000 permission sets for your organization. 

Permission sets are an ideal mechanism to apply system access for your users without affecting all other users who have the same profile and without having to create one-off profiles, which sometimes lead to an increase in the amount of maintenance.

A common use for permission sets is to grant additional permissions, in addition to the settings listed in a profile, to individuals without changing their profile, for example, to provide more rights than their profile currently allows.

Creating permission sets

To create a permission set, navigate to **Setup | Manage Users | Permission Sets**. Click on **New**. Enter a label, API name, and description.



If you plan to assign the permission set to all users who have the same type of user license, a best practice is to associate that user license with the permission set. However, if you plan to assign the permission set to users who currently have different licenses (or might have different licenses in the future), it is probably best to create an organization-wide permission set.

To continue creating the permission set (as outlined previously), either select a user license or select the **--None--** option (to create an organization-wide permission set). Finally, click on **Save**.



When you clone an existing permission set, the new permission set has the same user license and enabled permissions as the permission set it is cloned from.

Permission Set
[Help for this Page](#)

Create

Enter permission set information ! = Required Information

Label |

API Name |

Description i

Select the type of users who will use this permission set

Who will use this permission set? If you plan to assign this permission set to multiple users with different licenses, choose '--None--'. If only users with one type of license will use this permission set, choose the same license that's associated with them.

User License i

Managing users in Salesforce CRM

All users in your organization with access to Salesforce CRM require a username, an e-mail address, a password, and a profile along with an active user license.

Depending on the features your organization has purchased, you can have user options such as **Marketing**, **Service Cloud**, and **Mobile**, which give particular users the ability to access other features that are only available with a specific user license. A user can be assigned to one or more of these options.

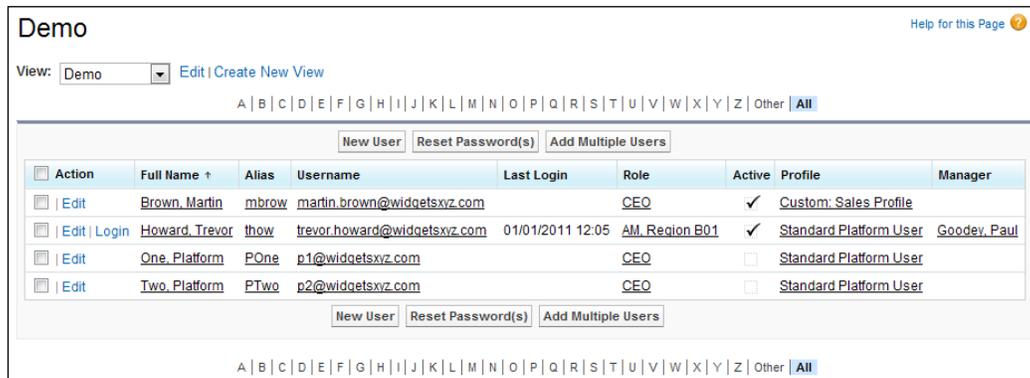
You can also create and manage other types of users outside your organization by applying the appropriate licenses that provide limited access to your Salesforce organization, as detailed later in this chapter.

In association with the user license, you can govern all users' access to data using the options available in either the profile settings or the sharing features.

Profile settings control access to applications and objects, while sharing features control access to specific records.

To go to the user detail page, navigate to **Setup | Manage Users | Users**.

The user detail page shows you a list of all the users in your organization as well as any portal users.



The screenshot shows the Salesforce user management interface. At the top, there is a 'Demo' header and a 'Help for this Page' link. Below the header, there is a 'View:' dropdown menu set to 'Demo' and a 'Create New View' link. A navigation bar contains letters A through Z and an 'All' link. Below this, there are three buttons: 'New User', 'Reset Password(s)', and 'Add Multiple Users'. The main content is a table with the following columns: Action, Full Name, Alias, Username, Last Login, Role, Active, Profile, and Manager. The table contains four rows of user data. Below the table, there are three buttons: 'New User', 'Reset Password(s)', and 'Add Multiple Users'. At the bottom, there is another navigation bar with letters A through Z and an 'All' link.

Action	Full Name	Alias	Username	Last Login	Role	Active	Profile	Manager
<input type="checkbox"/> Edit	Brown, Martin	mbrow	martin.brown@widgetsxyz.com		CEO	<input checked="" type="checkbox"/>	Custom: Sales Profile	
<input type="checkbox"/> Edit Login	Howard, Trevor	thow	trevor.howard@widgetsxyz.com	01/01/2011 12:05	AM_Region_B01	<input checked="" type="checkbox"/>	Standard Platform User	Goodev, Paul
<input type="checkbox"/> Edit	One, Platform	POne	p1@widgetsxyz.com		CEO	<input type="checkbox"/>	Standard Platform User	
<input type="checkbox"/> Edit	Two, Platform	PTwo	p2@widgetsxyz.com		CEO	<input type="checkbox"/>	Standard Platform User	

To show a filtered list of users, select a predefined list from the **View** drop-down list, or click on **Create New View** to define your own custom view.

For example, you can create a view with search criteria of **Last Login, less than, LAST 28 DAYS** to show all users who have not logged in for 28 days, as shown in the following screenshot:

Users
Edit View

Save Save As Delete Cancel

Step 1. Enter View Name

View Name: Over 28 Days

View Unique Name: Over_28_Days *i*

Created By: Paul Goodey, 30/01/2011 22:10 Modified By: Paul Goodey, 30/01/2011 22:18

Step 2. Specify Filter Criteria

Filter By Additional Fields (Optional):

	Field	Operator	Value
1.	Last Login	less than	LAST 28 DAYS

As the system administrator of Salesforce CRM, you can perform various user management actions, such as creating new users, resetting passwords, and even delegating user administration tasks to other users within your organization. The following list of user actions will be covered:

- Creating new users
- Viewing and editing user information
- Password management
- Session management
- Logging in as another user
- Creating custom user fields

Creating new user records

The steps to create a new user are as follows:

1. Click on **New User**
2. Enter fields in the **General Information** and **Locale Settings** sections
3. Check the **Generate new password and notify user immediately** box
4. Save the new user details

To create a new user for your organization, navigate to the user detail page. This page displays a list of all the users in your organization. To go to the **New User** page, navigate to **Setup | Manage Users | Users**. Now, click on the **New User** button.

Looking at the top section of the page, you will see the **General Information** section, as shown in the following screenshot:

The screenshot shows the 'New User' form in Salesforce CRM. The form is titled 'New User' and has a 'User Edit' section with 'Save', 'Save & New', and 'Cancel' buttons. The 'General Information' section is highlighted and contains various fields. Fields with a red bar on the left indicate required information. The required fields are: Last Name, Email, Username, User License, and Profile. Other fields include First Name, Alias, Nickname, Title, Company, Department, Division, Role, Active, Marketing User, Offline User, Knowledge User, Force.com Flow User, Service Cloud User, Site.com Contributor User, and Site.com Publisher.

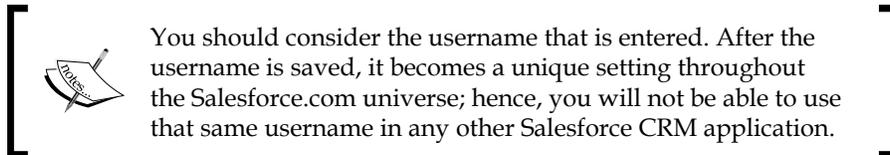
The mandatory user information is shown with a red bar and requires the entry of the user's last name, e-mail address, username user license, and profile.

 The length of users' passwords cannot exceed 16,000 bytes.

The e-mail address automatically becomes the username, but you can change it prior to saving it, if required.

 **Restricting the domain names of users' e-mail addresses**
You can restrict the domain names of users' e-mail addresses to a list of values such as xxx@WidgetsXYZ.com, yyy@CompanyXYZ.com, and so on. After this, attempts to set a user's e-mail address to an unlisted domain (such as xxx@MyNonCompanyWebMail.com) will result in an error.

This feature can only be enabled by sending a request to Salesforce customer support. When selecting a user license, note that some further options become unavailable depending on the license type you choose. For example, the **Marketing User** and **Allow Forecasting** options are not available for Force.com user licenses because the **Forecasts** and **Campaigns** tabs are not available to users with that license. Also, the selection of a profile from the available list depends on the user license you have chosen.



You can select various checkboxes that give the user additional features or options. The types of additional features are available by selecting one or more of the following example checkboxes:

- **Marketing User**
- **Offline User**
- **Knowledge User**
- **Force.com Flow User**
- **Service Cloud User**
- **Site.com Publisher User**
- **Salesforce CRM Content User**

You will not be able to select these features if they are not supported by your user license type. Also, you will be unable to save the new user record if you do not have any remaining licenses available for these features.

At the bottom of the **New User** edit page, there are further sections that include the **Locale Settings** section, as shown in the following screenshot:

The screenshot displays the 'New User' edit page in Salesforce CRM, showing several configuration sections:

- Mailing Address:** Includes input fields for Street, City, State/Province, Zip/Postal Code, and Country.
- Single Sign On Information:** Includes a text input field for Federation ID.
- Additional Information:** Includes a dropdown menu for Hierarchical (set to 'User') and a search icon.
- Locale Settings:** Includes dropdown menus for Time Zone (set to '(GMT-05:00) Eastern Standard Time (America/New_York)'), Locale (set to 'English (United States)'), and Language (set to 'English').
- Approver Settings:** Includes text input fields for Delegated Approver and Manager, each with a search icon, and a dropdown menu for Receive Approval Request Emails (set to 'Only if I am an approver').
- salesforce.com Newsletter Settings:** Includes three checkboxes: 'Receive the salesforce.com newsletter' (unchecked), 'Receive the salesforce.com administrator newsletter' (unchecked), and 'Generate new password and notify user immediately' (checked).

At the bottom of the form, there are three buttons: 'Save', 'Save & New', and 'Cancel'.

Saving new user records

Complete the required information, which is displayed with a red bar, and then check the **Generate new password and notify user immediately** checkbox, and save the details by clicking on the **Save** button. Upon saving, the user's login name and a temporary password are e-mailed via Salesforce.com to the new user.



Junk e-mail folder

If you have generated the new password to be sent but the new user cannot see the e-mail notification from Salesforce.com in his or her inbox, you might need to have the user check his or her junk e-mail folder.

The following table lists the key standard user fields with the required fields shown in bold:

First Name	Last Name	Alias	E-mail	Username
Community Nickname	Title	Company	Department	Division
Role	User License	Profile	Active	Grant Checkout Access
Marketing User	Offline User	Knowledge User	Service Cloud User	Mobile User
Mobile Configuration	Accessibility Mode	Color-Blind Palette on Charts	Salesforce CRM Content User	Receive Salesforce CRM Content Email Alerts
Receive Salesforce CRM Content Alerts as Daily Digest	Allow Forecasting	Call Center	Phone	Extension
Fax	Mobile	Email Encoding	Employee Number	Mailing Address Fields
Time Zone	Locale	Language	Delegated Approver	Manager
Receive Approval Request Emails	Newsletter	Admin Newsletter	Development Mode	Send Apex Warning Emails

Viewing new user records

After saving the **User Edit** page, you are presented with the details page for the user where you can view the information that was entered, as shown in the following screenshot:

The screenshot shows the 'User Detail' page for a user named Trevor Howard. At the top, there are navigation links for 'Personal Groups (0)', 'Public Group Membership (0)', 'Queue Membership (1)', 'Managers in the Role Hierarchy (3)', 'Remote Access (0)', and 'Login History (2+)'. Below these are buttons for 'Edit', 'Reset Password', and 'Login'. The main content is a table of user details:

Name	Trevor Howard	Role	AM Region B01
Alias	thow	User License	Salesforce
Email	trevor.howard@widgetsxyz.com	Profile	Custom Sales Profile
Username	trevor.howard@widgetsxyz.com	Active	<input checked="" type="checkbox"/>
Community Nickname	th1	Marketing User	<input type="checkbox"/>
Title		Offline User	<input type="checkbox"/>
Company	WidgetsXYZ	Knowledge User	<input type="checkbox"/>

In the view's **User Detail** page, the following types of read-only fields (among others) can be seen:

- **Used Data Space**
- **Last Login**
- **Last Password Change or Reset**



Do not overwrite active or inactive user records with new user data

Salesforce recommends that you avoid overwriting inactive user records with new user data. Doing this prevents you from tracking the history of past users and the records associated with them.

There are also situations where you might consider it appropriate to recycle an active user record, but it is better to deactivate users when they are no longer using Salesforce and create a new record for each new user.

A typical real-world example of recycling a user record, and one to avoid, is sometimes encountered when a sales team is organized into sales territories.

The sales team user records in Salesforce are stamped with a territory indicator, and any account records that are located in their particular territory are assigned to the user record (set as the record owner). This way, the user record simply acts as a container for the territory.

Managing user records in this way results in both audit and maintenance issues. For example, if Tina Fox changes her sales territory, all her personal information (username, password, e-mail, address, phone number, and so on) has to be transferred to a new user record, requiring Tina to reactivate a new password and re-enter both personal details and all her personal preferences in the Salesforce application.

The issue worsens if the user record (or territory) that Tina is getting reassigned to is held by, say, Timothy Little, as he would also need to reset his personal details.

This approach leads to a technically complex method of territory reassignment and a very disappointing user experience for your sales team. Fortunately, Salesforce provides features such as criteria-based sharing rules, sales teams, and territory management to better manage the organization of sales territories.

Adding multiple users

If you have several users to add, you can add more than one at a time. To add multiple users, navigate to **Setup | Manage Users | Users**. Now, click on the **Add Multiple Users** button.

As you can see, this can be a quick method to create users, as not all required fields have to be entered in this page:

The screenshot shows the 'Add Users' interface in Salesforce. At the top, there are 'Save' and 'Cancel' buttons. Below them is a 'User License' dropdown menu currently set to 'Salesforce Platform'. The main section is titled 'New Users' and contains two identical user entry forms. Each form has the following fields: 'New User #1' (or #2), 'First Name' (text input), 'Last Name' (text input), 'Email (User Name)' (text input), 'Profile' (dropdown menu set to '--None--'), and 'Role' (dropdown menu set to '<None Specified>'). At the bottom of the form, there is a checkbox labeled 'Generate passwords and notify user via email' and 'Save' and 'Cancel' buttons.

If, however, after initially saving multiple user records, you attempt to edit a user record via the user edit screen, you will be prompted to fill out all mandatory fields.

Delegation of user management

If you have an organization with a large number of users or a complex role hierarchy, you can delegate aspects of user administration to users who are not assigned with the system administrator profile.

This allows you to focus on tasks other than managing users for every department or structure that your company has within Salesforce. This provides further benefits for global organizations that encounter time zone and cultural differences, as it allows a user based in that region with local knowledge to create users, which saves time and results in a better user experience.

For example, you might want to allow the manager of the Asia Pacific Operations team to create and edit users in the Asia Pacific Operations Team Leader role and all subordinate roles.

There are currently two options to provide this delegated user management access:

- Create a profile with the **Manage Users** permission
- Use delegated administration

Creating a profile with the Manage Users permission

This option is not recommended and should be very carefully considered, as it allows a much greater range of system administration functions to be carried out by the user.

In addition to creating and managing users, the **Manage Users** permission also allows the user to perform the following:

- Expire all passwords
- Clone, edit, or delete profiles
- Edit or delete sharing settings
- Edit user login hours

By providing users with the **Manage Users** permission, as you can see, there are many other permissions that are switched on, which introduces security risks.

Using delegated administration

Delegated administration is a more secure method to provide delegated user management access, as it allows you to assign limited administrative privileges to the selected non-administrator users in your organization.

Delegated administrators can perform the following tasks:

- Create and edit users and reset passwords for users in specified roles and all subordinate roles
- Assign users to specified profiles
- Log in as a user who has granted login access to his or her administrator

To create delegated groups, navigate to **Setup | Security Controls | Delegated Administration**. Now, click on the **New** button or select the name of an existing delegated administration group.

[Help for this Page](#) ?

Manage Delegated Groups

Below are delegated groups defined for your organization. You can choose to delegate user administration, custom object administration, or both to the delegated administrators of this group.

Delegated Groups New				
Action	Delegated Group Name	Login Access	Created By	Modified By
Edit	User Management	✓	Paul Goodey, 30/01/2011 17:40	Paul Goodey, 31/01/2011 09:03

Here, we look at the existing group that has been named **User Management**:

[Help for this Page](#) ?

Delegated Group
User Management

Delegated Group Detail [Edit](#) [Delete](#)

Delegated Group Name **User Management** Enable Group for Login Access

Created By **Paul Goodey, 30/01/2011 17:40** Modified By **Paul Goodey, 31/01/2011 10:46**

Delegated Administrators [Delegated Administrators Help](#) ?

Action	Users	Modified By
Remove	Martin Brown	Paul Goodey, 30/01/2011 17:53

User Administration [User Administration Help](#) ?

Action	Roles and Subordinates	Modified By
Remove	AM_Region B01	Paul Goodey, 30/01/2011 17:54

Assignable Profiles [Assignable Profiles Help](#) ?

Action	Profiles	Modified By
Remove	Custom_Sales_Profile	Paul Goodey, 30/01/2011 18:13

Custom Object Administration [Custom Object Administration Help](#) ?

No custom objects specified.

The **Delegated Administrators** section allows you to select and add the users that are to be given the delegated administration permission.

The **User Administration** section allows you to select and add roles that the delegated administrators can assign to the users they create and edit. They can assign users for the stated roles and all subordinated roles.

The **Assignable Profiles** section allows you to select and add profiles that the delegated administrators can assign to the users they create and edit.

To enforce security, profiles with the **Modify All Data** permission (such as the **System Administrator** profile) cannot be assigned by a delegated administrator. See the following example message that is shown when you attempt to allow the delegated administrator to assign the **System Administrator** profile:

Assignable Profiles

Specify the profiles that delegated administrators of this group can assign to the users they create profile. They can only assign users to these profiles.

Save Save & More Cancel

Assignable Profiles

System Administrator

Error: Profiles with the permission "Modify All Data" cannot be assigned by delegated administrators.



If a user is a member of more than one delegated administration group, be aware that he or she can assign any of the assignable profiles to any of the users in roles he or she can manage.

Select the **Enable Group for Login Access** option if you want to allow delegated administrators in this group to log in as users who have granted login access to their administrators and are in the roles selected for the delegated administrator group.

Edit Delegated Group
[Help for this Page](#)

User Management

Delegated Group Edit

Delegated Group Name

Enable Group for Login Access

Save
Cancel

To look at how users can grant login access to their administrators, refer to the *Logging in as another user* section toward the end of this chapter.



Agreement in using active user licenses by delegated user administrators

If you have established delegated user management in your organization, you will need to have an agreement between yourself and the delegated user administrators about how many of the available licenses can be used for each area of the organization. You cannot automatically limit the number of active users that can be created by users with these permissions.

Viewing and editing user information

To view or edit user information, navigate to **Setup | Manage Users | Users**. Now, click on **Edit** next to a user's name. Change the necessary information and click on **Save**.

Users can also change or add to their own personal information after they log in.

If you change a user's e-mail address and do not select the **Generate new password and notify user immediately** option, a confirmation message will be sent to the new e-mail address that you entered to verify the change of e-mail. The user must click on the link provided in that message for the new e-mail address to take effect.

If you change a user's e-mail and reset the password at the same time, the new password is automatically sent to the user's new e-mail address, and an e-mail verification is not required.

Click on **Unlock** to unlock a user who is locked out of Salesforce.



The **Unlock** button is only available when a user is locked out.

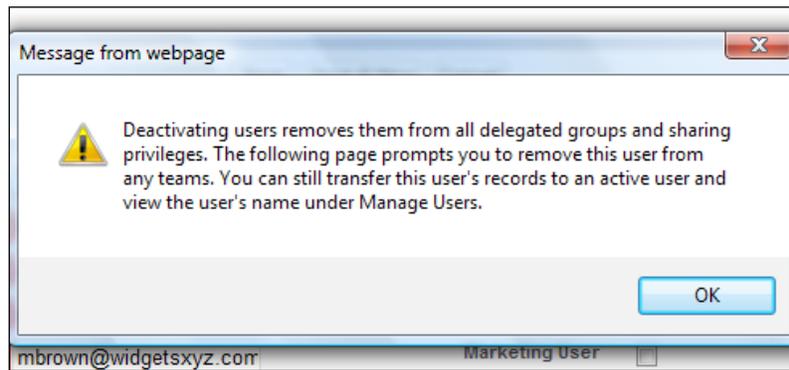
Searching for users

You can use the search features (described in the previous chapter) to search for any user in your organization regardless of the user's status. However, when using a lookup dialog from fields within records, the search results return active users only.

Deactivating users

You cannot remove users from the system, but you can deactivate their records so that they can no longer access the application. To deactivate users, navigate to **Setup** | **Manage Users** | **Users**. Now, click on **Edit** next to a user's name, disable the **Active** checkbox, and then click on **Save**.

If the user is a member of account, sales, or case teams, you are prompted to remove the user from those teams.



When deactivating users, there are some considerations that should be borne in mind, such as the following:

- Deactivating users with **Run as specified user** dependencies set on dashboards causes those dashboards to stop displaying. Each dashboard has a running user whose security settings determine which data is to be displayed in a dashboard. You need to reassign **Run as specified user** to an active user with the appropriate permissions.
- As mentioned in *Chapter 1, Organization Administration*, in the section *License information*, Salesforce bills an organization based on the total number of licenses and not on active users.
- If **Chatter** is enabled, a user who has been included in either the **Following** or **Followers** list is deactivated and the user is removed from the list. However, he or she is restored to the lists if he or she is reactivated.


 Deactivating users who have been explicitly included as part of an approval process, which is described in *Chapter 6, Implementing Business Processes in Salesforce CRM*, will cause the approval step to fail.

Freezing user accounts

This feature allows you to freeze user records. Often, there are times where you might not want to deactivate a user immediately (such as when a user is part of an approval process) but you must prevent them from logging into your organization (as they have left the company, for example) while you perform the steps to deactivate them.

To freeze a user record, navigate to **Setup | Manage Users | Users**. Now, click on a user's name to access their user detail page. Then, click on the **Freeze** button.

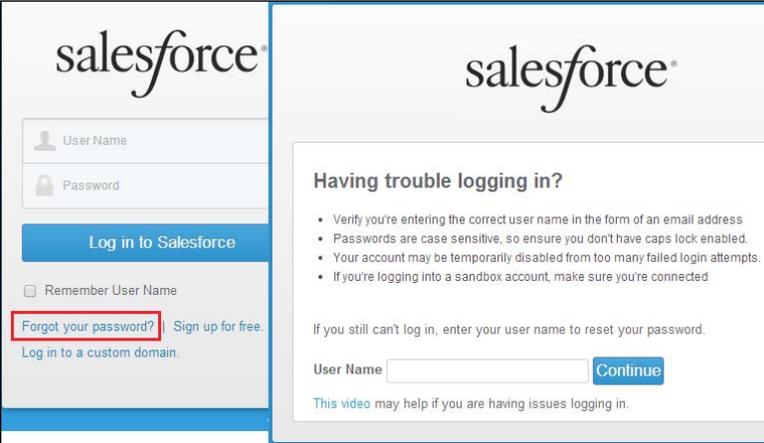
Password management

You have the following options to reset passwords for users in Salesforce CRM:

- Resetting passwords
- Expiring passwords

Resetting passwords

If users have forgotten their password, they can click on the **Forgot your password?** link on the Salesforce CRM login page, which presents them with a screen to enter their username, as shown in the following screenshot:



The screenshot shows the Salesforce login interface. On the left, there is a login form with fields for 'User Name' and 'Password', a 'Log in to Salesforce' button, and a 'Remember User Name' checkbox. Below the form, the 'Forgot your password?' link is highlighted with a red box. On the right, there is a 'Having trouble logging in?' section with a list of troubleshooting tips and a 'User Name' input field with a 'Continue' button.

The user will then receive an e-mail from Salesforce that contains a new password link that will require them to answer a previously set security question, (such as **Where were you born?**) before their password is reset, and then they can log in to Salesforce.

To reset a user's password, navigate to **Setup | Manage Users | Users**. Now, select the checkbox next to the user's name.

Optionally, to change the passwords for all currently displayed users, check the box in the column header to select all rows.

Click on **Reset Password** to have a new password e-mailed to the user(s).

 After you reset users' passwords, some users might need to reactivate their computers to successfully log in to Salesforce (see the previous chapter).

Expiring passwords

You can expire passwords for all users any time to enforce extra security for your organization. After you expire passwords, users might need to activate their computers to successfully log in to Salesforce (see the previous chapter).

 This includes system administrators if they don't have **Password Never Expires** activated on their profile (or permission set); however, the standard **System Administrator** profile has the **Password Never Expires** setting activated by default.

To expire passwords for all users except those with the **Password Never Expires** permission, navigate to **Setup | Security Controls | Expire All Passwords**. Now, select the **Expire all user passwords** checkbox and then click on **Save**.

The next time each user logs in, they will be prompted to reset their password.

 After you expire passwords, some users might need to reactivate their computers to successfully log in to Salesforce (see the previous chapter).

Password policies

There are several password and login policy features that help you improve your organization's security. To set these password policies, navigate to **Setup | Security Controls | Password Policies**. Select the required settings and then click on **Save**.

Let's look at each of the password policies that are shown in the following screenshot:

Password Policies Help for this Page ?

Set the password restrictions and login lockout policies for all users.

Password Policies - Required Information

User passwords expire in

Enforce password history

Minimum password length

Password complexity requirement

Password question requirement

Maximum invalid login attempts

Lockout effective period

Obscure secret answer for password resets

Require a minimum 1 day password lifetime

Forgot Password / Locked Account Assistance

Message

Help link

Forgot password preview If you still can't log in, try the following: Contact your company's administrator for assistance.

Locked account preview To reset your account, try the following: Contact your company's administrator for assistance.

API Only User Settings

Alternative Home Page i

The user password expiration period

Password expiration periods for all users in your organization are set by the **User passwords expire in** picklist selection.

This sets the length of time until all user passwords expire and must be changed. Users with the **Password Never Expires** permission are not affected by this setting.



The options are **30 days, 60 days, 90 days, 180 days, One Year, and Never Expires.**

Enforce password history

The **enforce password history** setting is used to remember users' previous passwords so that they must always enter a previously unused password. The password history is not saved until you set this value. You cannot select the **No passwords remembered** option unless you select the **Never expires** option for the **User passwords expire in** field.

 The options are either **No passwords remembered** or between **1 password remembered** and **24 passwords remembered**.

Minimum password length

The **Minimum password length** feature sets the minimum number of characters required for a password. When you set this value, existing users are not affected until the next time they change their passwords.

 The options are **5 characters**, **8 characters**, **10 characters**, or **12 characters**.

Password complexity requirement

The **Password complexity requirement** feature sets a restriction on which types of characters must be used in a user's password. The options are **No Restriction** and **Must mix alpha and numeric** (which require at least one alphabetic character and one number), **Must mix alpha, numeric and special characters** (which requires at least one alphabetic character, one number, and one of the : !, #, \$, %, -, _, =, +, <, and > characters), **Must mix numbers and uppercase and lowercase letters** (which requires at least one number, one uppercase letter, and one lowercase letter.), and **Must mix numbers, uppercase and lowercase letters, and special characters** (which requires at least one number, one uppercase letter, one lowercase letter, and one of the !, #, \$, %, -, _, =, +, <, and > characters).

 The **Must mix alpha and numeric characters** option is the default option.

Password question requirement

Password question requirement setting requires a user's answer to the password hint question to not contain the password itself.

 The options are either **Cannot contain password**, which means that the answer to the password hint question cannot contain the actual password itself, or **None**, which is the the default, for no restrictions on the answer.

Maximum invalid login attempts

The **Maximum invalid login attempts** feature sets the number of incorrect login attempts allowed by a user before they get locked out. The options are **No limit**, **3**, **5**, and **10**.

 The default number of invalid login attempts is 10.

Lockout effective period

The **Lockout effective period** feature sets the duration of the login lockout. The options are **15 minutes**, **30 minutes**, **60 minutes**, and **Forever (must be reset by admin)**.

 The default lockout effective period is 15 minutes.

If a user gets locked out, they can either wait until the lockout effective period expires, or you can view the user's information and click on **Unlock**. The **Unlock** button is only displayed when a user is locked out.

Obscure secret answer for password resets

The **Obscure secret answer for password resets** feature hides the text as users type the answers to security questions. The default option is unchecked, which will display the answer in plain text when users answer a security question, say, when they're resetting their passwords.

Require a minimum 1 day password lifetime

When selected, the **Require a minimum 1 day password lifetime** option prevents users from changing their passwords more than once per day. The default option is unchecked, which allows users to change their password as often as they like.

Forgot Password / Locked Account Assistance

The following sections discuss the options available under **Forgot Password / Locked Account Assistance**.

Message

By setting this message, the text will appear in the lockout e-mail that users receive whenever they need you to reset their password. Your users will also see the message text in the confirm identity screen and e-mail that they receive whenever their password is reset. It is useful to add your contact details and a personal message.

Help link

Setting this link results in the text above this option appearing as a web URL that, when clicked on, will allow your users to navigate to a separate page, such as a custom help page, that you have available.

API Only User Settings

The upcoming section discusses the option available under **API Only User Settings**.

Alternative Home Page

API Only Users will be redirected to this URL after they have confirmed a user management change (such as resetting a password). This can be used as a way of confirming the change as users with the profile or permission setting of **API Only User** cannot access Salesforce via the user interface and hence receive no visual confirmation.

Session management

There are several session security features that help you improve your organization's security. These features include setting the session expiration timeout, locking sessions to the IP address from which they originated, and other organization-wide session settings. To set these session options, navigate to **Setup | Security Controls | Session Settings**. Select the required settings, as shown in the following screenshot, and then click **Save**:

Session Settings Help for this Page ?

Set the session security and session expiration timeout for your organization.

Session Timeout

Timeout value

Disable session timeout warning popup

Force logout on session timeout

Session Settings

Lock sessions to the IP address from which they originated

Require secure connections (HTTPS) [i](#)

Force relogin after Login-As-User

Require HttpOnly attribute

Use POST requests for cross-domain sessions

Login Page Caching and Autocomplete

Enable caching and autocomplete on login page

Identity Confirmation

Enable SMS-based identity confirmation [i](#)

Clickjack Protection

Enable clickjack protection for setup pages [i](#)

Enable clickjack protection for non-setup Salesforce pages [i](#)

Enable clickjack protection for non-setup customer Visualforce pages

Cross-Site Request Forgery (CSRF) Protection

Enable CSRF protection on GET requests on non-setup pages [i](#)

Enable CSRF protection on POST requests on non-setup pages [i](#)

Session Security Levels

Standard		High Assurance
<input type="text" value="Username Password"/>	Add ▶ Remove ◀	<input type="text" value="Two Factor Authentication"/>
<input type="text" value="Delegated Authentication"/>		<input type="text"/>

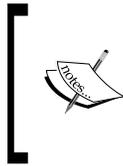
Let's look at each of the session security features.

Session timeout

There are various features that can be used to set the session timeout as per the following sections.

Timeout value

Timeout value sets the length of time after which inactive users are automatically logged out of the system. The options are between **15 minutes** and **12 hours**.



As a system administrator, you need to balance the requirements for user satisfaction and the enforcement of security controls; however, it is recommended that you choose as short a timeout period as possible to protect sensitive information and enforce stricter security.

The value of the last active session is not updated until halfway through the timeout period. So, if you have a 2-hour timeout, the system does not check for activity until 1 hour has passed. As an example, say, you have a 2-hour timeout value. If you update a record after 30 minutes, the last active session value is not updated because there was no activity after 1 hour and hence, you will still be logged out in another 1 hour and 30 minutes, because the last active session has not been updated.

Disable session timeout warning popup

The **Disable session timeout warning popup** feature sets whether inactive users are presented with a timeout warning message. Users are warned 30 seconds before the session timeout, as set by the timeout value.

Force logout on session timeout

Enabling **Force logout on session timeout** option causes inactive users to have their browsers refreshed and set to the Salesforce.com login page when the session times out.



It is recommended that you do not select **Disable session timeout warning popup** when enabling the Force logout on the session timeout feature.

Session settings

There are various features that can be used to set the session as per the following sections.

Lock sessions to the IP address from which they originated

The **Lock sessions to the IP address from which they originated** option is used to specify whether users' sessions are to be locked to the IP address with which they logged in.

 Enabling this option helps prevent the hijacking of valid user sessions by unauthorized people.

Require secure connections (HTTPS)

The **Require secure connections (HTTPS)** option sets whether HTTPS (instead of the less secure HTTP connection) is required to access Salesforce.

 This option is enabled by default and can only be disabled by sending a request to salesforce.com support.

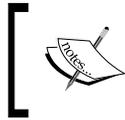
Force relogin after Login-As-User

The **Force relogin after Login-As-User** option, when set, results in you having to log in again to get back into Salesforce after logging out as a logged-in user. When this is not set, you are taken to the original session after logging out as the logged-in user, and you do not have to re-log in.

 This option is enabled by default for new organizations since the Summer 2014 release.

Require HttpOnly attribute

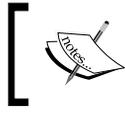
The **Require HttpOnly attribute** option restricts access to the session ID cookies. The effect of this is that cookies with the HttpOnly attribute are not accessible using non-HTTP calls such as JavaScript methods from custom or packaged applications.



Setting this will result in custom or packaged applications that use JavaScript to call session ID cookies that are no longer working, as they are denied access to the session cookie.

Use POST requests for cross-domain sessions

The **Use POST requests for cross-domain sessions** option configures the organization to send session information using a POST request instead of a GET request during cross-domain exchanges, such as when calling a Visualforce page that is served on a different URL to the standard Salesforce CRM pages.



In this scenario, POST requests are more secure than GET requests as the session information is in the body of the request.

Login page caching and autocomplete

The **Login page caching and autocomplete** feature, which stores users' login details (just the list of usernames but not the password), is as per the upcoming section.

Enable caching and autocomplete on login page

The **Enable caching and autocomplete on login page** option enables users' browsers to store username text and so, after their initial log in, usernames are automatically set in the **User Name** field on the login page.



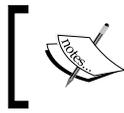
This option is enabled by default.

Identity confirmation

The **Identify confirmation** feature, which allows further mechanisms to extend the standard use of e-mail confirmation, is as per the upcoming section.

Enable SMS-based identity confirmation

The **Enable SMS-based identity confirmation** option enables users to receive a One-Time PIN, which they receive via SMS. Once enabled, administrators or users must verify their mobile phone number before taking advantage of this feature.



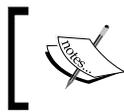
This option is enabled by default and can only be disabled by sending a request to salesforce.com support.

Clickjack protection

Clickjacking is a malicious technique of fooling a web user into clicking on something different from what the user intended and often takes the form of embedded code or script that executes without the user's knowledge, for example, when clicking on a button or concealed link that then performs another function. There are various features that can be used to set clickjack protection as per the upcoming sections.

Enable clickjack protection for setup pages

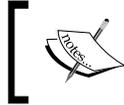
The **Enable clickjack protection for setup pages** option adds security to help guard against clickjack attacks on setup Salesforce pages.



This option is enabled by default and can only be disabled by sending a request to salesforce.com support.

Enable clickjack protection for non-setup Salesforce pages

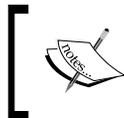
The **Enable clickjack protection for non-setup Salesforce pages** option adds security to help guard against clickjack attacks on non-setup Salesforce pages.



This option is enabled by default and can only be disabled by sending a request to salesforce.com support.

Enable clickjack protection for non-setup customer Visualforce pages

The **Enable clickjack protection for non-setup customer Visualforce pages** option protects against clickjack attacks on your custom Visualforce pages. The effect of this is that Visualforce pages in a page layout do not function when clickjack protection is on.



Setting this will result in custom Visualforce pages within a frame or iframe that is no longer working as intended; you might see a blank page or the page might get displayed without the frame.

Cross-Site Request Forgery (CSRF) Protection

Cross-Site Request Forgery (CSRF) is a malicious technique in which unauthorized commands are crafted (by a script or a page link, for example) to be sent by a user to a website that has been authenticated.

These options protect against CSRF attacks by modifying the non-setup pages to include a random string of characters in the URL parameters or as a hidden embedded field. The system then verifies this string of characters and only executes the command if the value matches the expected value. There are various features that can be used to set protection against CSRF attacks as per the upcoming sections.

Enable CSRF protection on GET requests on non-setup pages

The **Enable CSRF protection on GET requests on non-setup pages** option protects against CSRF attacks on GET requests on non-setup pages. It is enabled by default and can only be disabled by sending a request to salesforce.com support.

Enable CSRF protection on POST requests on non-setup pages

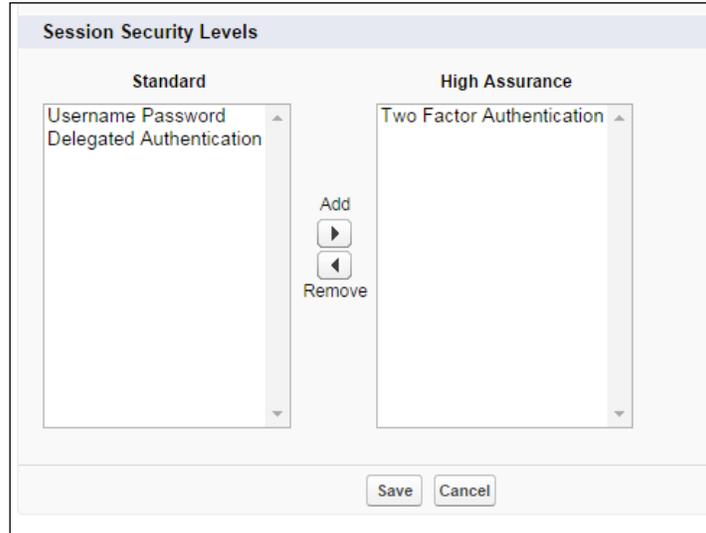
The **Enable CSRF protection on POST requests on non-setup pages** option protects against CSRF attacks on POST requests on non-setup pages. It is enabled by default and can only be disabled by sending a request to salesforce.com support.

Session Security Levels

Session-level security settings are used for connected apps, reports, and dashboards. Here, you can restrict access to these areas of functionality based on the level of security associated with the authentication (login) method for the user's current session. You can restrict access to connected apps, reports, and dashboards by setting the level of security associated with the user's current authentication (login) method; each login method has one of the two security levels: either **Standard** or **High Assurance**. Different authentication methods are assigned with the following security levels:

- **Username Password – Standard**
- **Delegated Authentication – Standard**
- **Two-Factor Authentication – High Assurance**
- **Authentication Provider – Standard**
- **SAML – Standard**

To change the security level associated with a login method, navigate to **Setup | Security Controls | Session Settings**. Locate **Session Security Levels**, select the login method, and then click on the **Add** or **Remove** arrow to move it to the required category, as shown in the following screenshot:



Logging in as another user

To assist other users, you can log in to Salesforce as another user. If you have been granted access, you will see a **Login** button on their user record if they have granted login access to their administrator.

System administrators can also log in as any user in their organization without asking users to grant login access.



This feature is only available by sending a request to Salesforce.com support to have this in your organization.

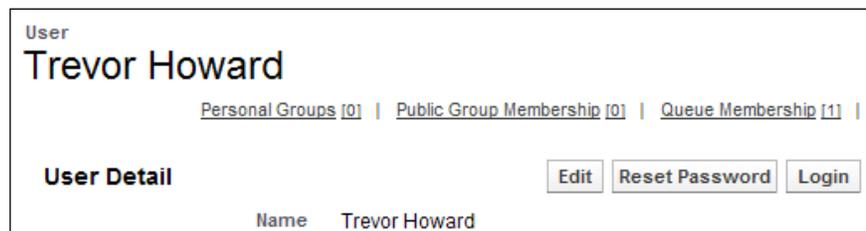
If you have had this feature activated by Salesforce, you can enable login access by navigating to **Setup | Security Controls | Login Access Policies**. On the **Login Access Policies** page, enable **Administrators Can Log in as Any User**. Finally, click on **Save**.

To log in as another user, navigate to **Setup | Manage Users | Users**. Now, click on the **Login** link next to the user who has granted you access.



<input type="checkbox"/> Action	Full Name ↑
<input type="checkbox"/> Edit	Brown, Martin
<input type="checkbox"/> Edit	Goodey, Paul
<input type="checkbox"/> Edit Login	Howard, Trevor
<input type="checkbox"/> Edit	One, Platform
<input type="checkbox"/> Edit	Two, Platform

You can also log in as another user from the **User Detail** page using the **Login** button, as shown in the following screenshot:



User
Trevor Howard

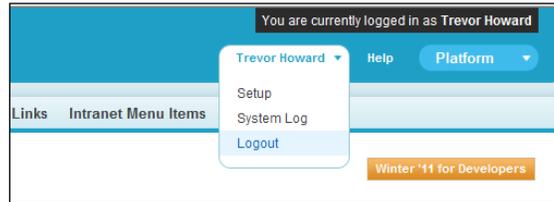
[Personal Groups \[0\]](#) | [Public Group Membership \[0\]](#) | [Queue Membership \[1\]](#) |

User Detail Edit Reset Password Login

Name Trevor Howard

The **Login** link or button only appears for users who have granted login access to an administrator. After you have logged in as another user, you will notice a message in the top-right corner of all Salesforce pages that display the **You are currently logged in as** message.

To return to your administrator account, click on the logged-in user's name (the user who has granted you access – **Trevor Howard**, in this example). Then, click on the **Logout** option.

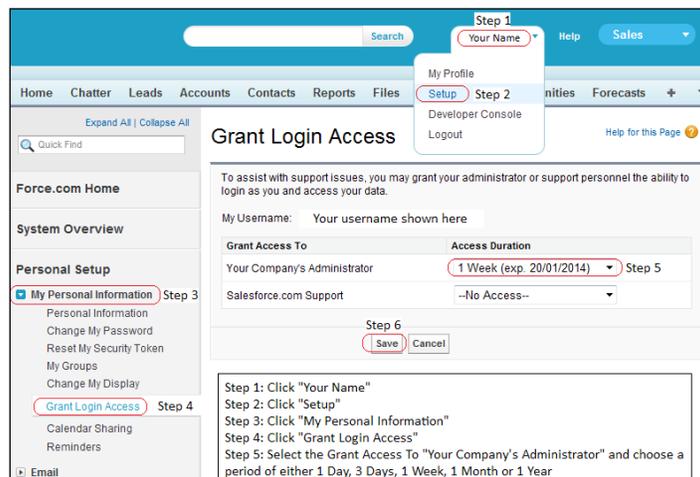


 Regardless of the login access policy, whenever an administrator logs in as another user, the login and logout events are recorded in the setup audit trail.

A how-to guide to help users grant login access to you

There are many occasions where it is useful for you to log in as one of the users in your organization. This could be, say, to check data access from their role or profile or to check reports or dashboards, and so on.

Rather than instructing individuals one by one, you can save time for both yourself and the users in your organization by preparing a how-to guide to help users grant login access to you. Produce a how-to guide that lists the steps that need to be taken to create the required setting; the following is an example:



When the **Administrators Can Log in as Any User** feature is enabled, users will no longer have the option to grant login access to administrators, but they can still grant login access to Salesforce.com support.

Where additional apps have been installed, the list of entities that users can select to grant access might increase. For example, if your organization has installed the **Nonprofit Starter Pack** app published by the Salesforce.com Foundation (see <http://www.salesforcefoundation.org/nonprofitstarterpack>), you will see the option to grant access to this organization's support team, as shown in the following screenshot:

Grant Login Access [Help for this Page](#)

To assist with support issues, you may grant your administrator or support personnel the ability to login as you and access your data.

My Username: martin.brown@widgetsxyz.com

Grant Access To	Access Duration
Your Company's Administrator	1 Week (exp. 20/01/2014)
Salesforce.com Support	--No Access--
Salesforce.com Foundation Support	--No Access--

Creating custom user fields

You can create custom fields for users and set custom links that appear on the user detail page. To go to the user field's page, navigate to **Setup | Customize | Users | Fields**, and then scroll down to the **User Custom Fields** section.

Field Label	API Name
Hourly Login Limit	LoginLimit
Info Emails	ReceivesInfoEmails
Language	LanguageLocaleKey
Locale	LocaleSidKey
Manager	Manager
Name	Name
Phone	Phone
Profile	Profile
Role	UserRole
SAML Federation ID	FederationIdentifier
Start of Day	StartDay
Time Zone	TimeZoneSidKey
Title	Title
Username	Username

Action	Field Label	API Name	Data Type
Edit Del	Must	Must__c	Text(12)
Edit Del	Must Set	Must_Set__c	Checkbox
Edit Del Replace	Sales Regions	Sales_Regions__c	Picklist (Multi)

The `User` object can be considered a special object in Salesforce, as there are restrictions on what can be configured. For example, there can be only one record type and page layout for the `User` object.

Summary

In this chapter, we described the features that are used to manage users within Salesforce CRM.

We looked at how user information can be accessed, the mechanisms to manage user passwords, and the options to set the session security.

We were introduced to the concepts of record ownership, profiles, and sharing and discussed at a high level how these concepts are used to control the application and record permissions for users.

We discussed other features that help with the administration of users using features such as granting login access to administrators and enabling delegated user administration.

In the next chapter, we will look in detail at mechanisms to control access to data and the features that provide data management and record sharing.

3

Configuration in Salesforce CRM

In *Chapter 1, Organization Administration* and *Chapter 2, User Management in Salesforce CRM*, we were introduced to the profile feature in Salesforce that is a controlling mechanism. Profiles are used to determine the functions users can perform, which type of data they can access, and what operations they can carry out on that data.

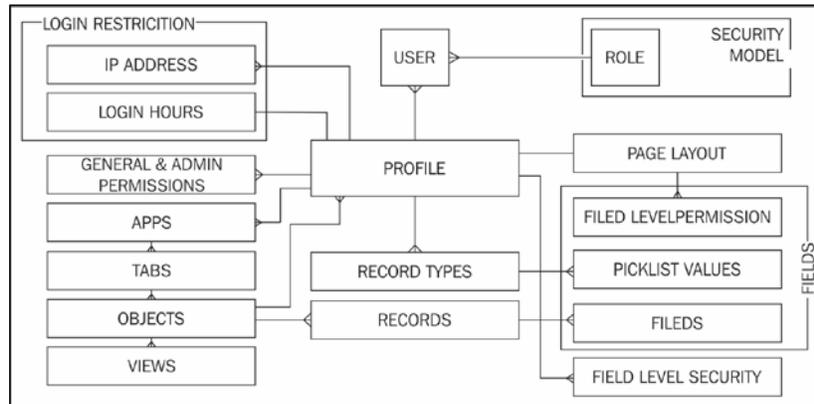
In this chapter, we will describe in detail the Salesforce CRM record storage features and user interfaces that can be customized, such as objects, fields, and page layouts. In addition, we will see an overview of the relationship that exists between the profile and these customizable features that the profile controls.

This chapter looks at the methods to configure and tailor the application to suit the way your company information can be best represented within the Salesforce CRM application.

We will look at mechanisms to store data in Salesforce and also explore the concepts of objects and fields. The features that allow this data to be grouped and arranged within the application are then considered by looking at apps, tabs, page layouts, and record types. Finally, we take a look at some of the features that allow views of data to be presented and customized by looking at related lists and list views in detail.

The relationship between a profile and the features that it controls

The following diagram describes the relationship that exists between a profile and the features that it controls:



The profile is used to:

- Control access to the type of license specified for the user and any login hours or IP address restrictions that are set. This was covered in detail in *Chapter 1, Organization Administration*.
- Control access to objects and records using the role and sharing model. If the appropriate object-level permission is not set on the user's profile, then the user will be unable to gain access to the records of that object type in the application. This was introduced in *Chapter 2, User Management in Salesforce CRM*, and will be covered in detail in *Chapter 4, Data Management*.

In this chapter, we will look at the configurable elements that are set in conjunction with a profile. These are used to control the structure and the user interface of the Salesforce CRM application.

Objects

Objects are a key element in Salesforce CRM, as they provide a structure for storing data and are incorporated into the interface, allowing users to interact with the data.

Similar in nature to a database table, objects have properties such as:

- Fields, which are similar in concept to a database column

- Records, which are similar in concept to a database row
- Relationships with other objects
- Optional tabs, which are user-interface components that display object data

Standard objects

Salesforce provides standard objects in the application when you sign up; these include **Account**, **Contact**, **Opportunity**, and so on. These are the tables that contain the data records in any standard tab, such as **Accounts**, **Contacts**, and **Opportunities**.

In addition to standard objects, you can create custom objects and custom tabs.

Custom objects

Custom objects are the tables you create to store your data. You can create a custom object to store data specific to your organization. Once you have custom objects and have created records for these objects, you can create reports and dashboards based on the record data in your custom object.

Fields

Fields in Salesforce are similar in concept to a database column; they store the data for the object records. An object record is analogous to a row in a database table.

Standard fields

Standard fields are predefined fields that are included as standard within the Salesforce CRM application. Standard fields cannot be deleted but nonrequired standard fields can be removed from page layouts, whenever necessary.

With standard fields, you can customize visual elements that are associated with the field, such as field labels and field-level help as well as certain data definitions such as picklist values, the formatting of auto-number fields (used as unique identifiers for the records), and the setting of field history tracking. Some aspects, however – such as the field name – cannot be customized and some standard fields (such as **Opportunity Probability**) do not allow the changing of the field label.

Custom fields

Custom fields are unique to your business needs and can not only be added and amended, but also deleted. Creating custom fields allows you to store the information that is necessary for your organization.

Both standard and custom fields can be customized to include custom help text that helps users understand how to use the field.

The screenshot shows the 'Opportunity Detail' page in Salesforce. At the top, there are buttons for 'Edit', 'Delete', and 'Clone'. Below these are several fields: 'Opportunity Owner' (Trevor Howard [Change]), 'Amount' (\$110,000.00), 'Private' (checkbox), 'Expected Revenue' (\$11,000.00), 'Opportunity Name' (Test), 'Close Date' (06/12/2012), 'Account Name' (Westwood), and 'Next Step'. A red box highlights the 'Type' field, which has a custom help text box that reads: 'This is a custom Help Text on a Standard field called Stage'. To the right of the 'Type' field, the 'Stage' is set to 'Prospecting' and the 'Probability (%)' is 10%.

Opportunity Detail Edit Delete Clone ▾			
Opportunity Owner	Trevor Howard [Change]	Amount	\$110,000.00
Private	<input type="checkbox"/>	Expected Revenue	\$11,000.00
Opportunity Name	Test	Close Date	06/12/2012
Account Name	Westwood	Next Step	
Type	This is a custom Help Text on a Standard field called Stage		
Stage	Prospecting	Probability (%)	10%

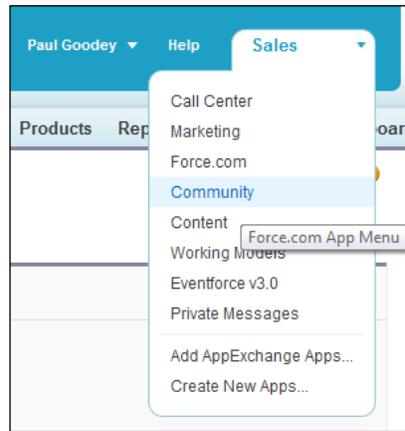
Object relationships

Object relationships can be set on both standard and custom objects and are used to define how records in one object relate to records in another object. Accounts, for example, can have a one-to-many relationship with opportunities; these relationships are presented in the application as related lists.

Apps

An app in Salesforce is a container for all the objects, tabs, processes, and services associated with a business function.

There are standard and custom apps that are accessed using the **App** menu located in the top-right corner of the Salesforce page, as shown in the following screenshot:



When users select an app from the **App** menu, their screen changes to present the objects associated with that app. For example, when switching from an app that contains the **Campaign** tab to one that does not, the **Campaign** tab no longer appears. This feature is applied to both standard and custom apps.

Standard apps

Salesforce provides standard apps such as **Sales**, **Call Center**, and **Marketing**.

Custom apps

Optionally, a custom app can include a custom logo. Both standard and custom apps consist of a name, a description, and an ordered list of tabs.

Subtab apps

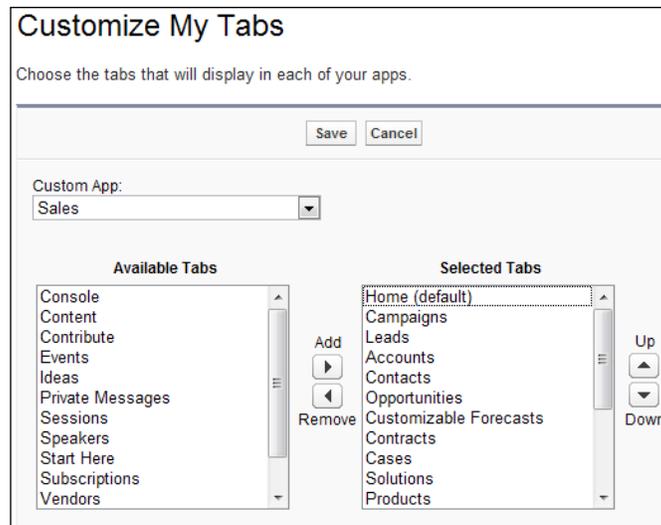
A subtab app is used to specify the tabs that appear on the Chatter profile page. Subtab apps can include both default and custom tabs that you can set. This is described in more detail in the *Salesforce Chatter* section in *Chapter 7, Salesforce CRM Functions*.

Tabs

A tab is a user-interface element that, when clicked on, displays the record data on a page specific to that object.

Hiding and showing tabs

To customize your personal tab settings, navigate to **Your Name | My Settings | Display & Layout | Customize My Tabs**. Now, choose the tabs that will get displayed in each of your apps by moving the tab name between the **Available Tabs** and **Selected Tabs** sections, and click on **Save**. The following screenshot shows you the section of tabs for the **Sales** app:



To customize the tab settings of your users, navigate to **Setup | Manage Users | Profiles**. Now, select a profile and click on **Edit**. Scroll down to the **Tab Settings** section of the page, as shown in the following screenshot:

Tab Settings

Overwrite users' personal tab customizations

Standard Tab Settings

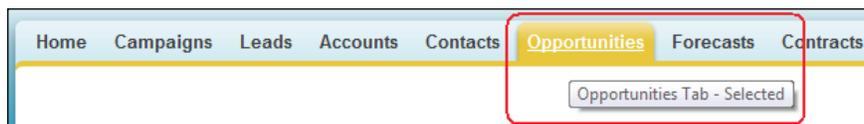
Home	Default On	Customizable Forecasts	Tab Hidden
Accounts	Default On	Ideas	Tab Hidden
Campaigns	Default Off	Leads	Default On
Cases	Default On	Opportunities	Default On
Console	Tab Hidden	Portals	Tab Hidden
Contacts	Default On	Products	Default On
Content	Default On	Reports	Default On
Contracts	Default On	Solutions	Default On
Dashboards	Default On	Subscriptions	Default On
Documents	Default On	Workspaces	Default On

Custom Tab Settings

Activity Tracker	Default On	Sessions	Tab Hidden
Events	Tab Hidden	Speakers	Tab Hidden
Intranet Menu Items	Default On	Start Here	Default On
Links to Objects	Default On	Vendors	Tab Hidden
MD Ones	Default On	Venues	Tab Hidden
Private Messages	Default On	Working Model Demo Links	Default On

Standard tabs

Salesforce provides tabs for each of the standard objects that are provided in the application when you sign up. For example, there are standard tabs for **Accounts**, **Contacts**, **Opportunities**, and so on.



 The visibility of the tab depends on the setting on the **Tab Display** setting for the app.

Custom tabs

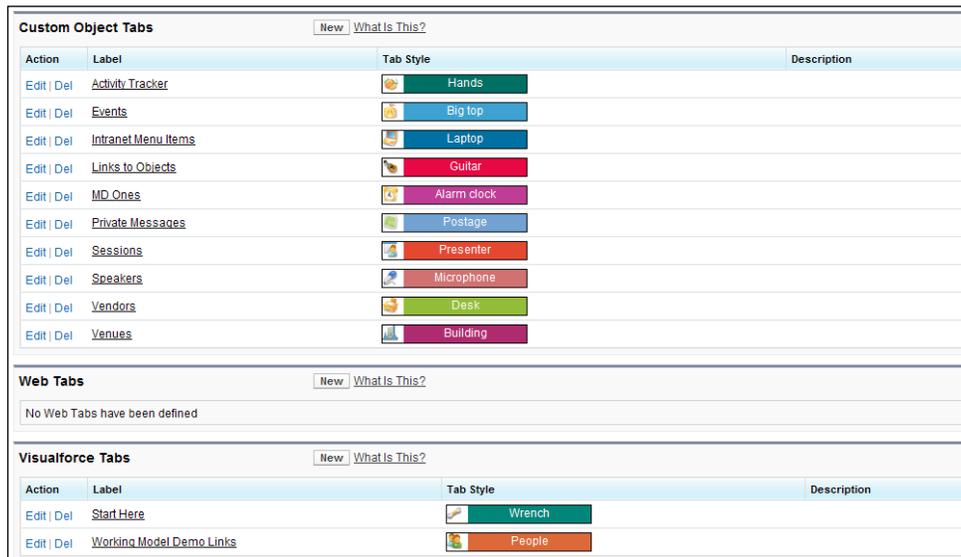
You can create three different types of custom tabs: **Custom Object Tabs**, **Web Tabs**, and **Visualforce Tabs**.

Custom Object Tabs allow you to create, read, update, and delete the data records in your custom objects. **Web Tabs** display any web URL in a tab within your Salesforce application. **Visualforce Tabs** display custom user-interface pages created using Visualforce.

Bear the following in mind when creating custom tabs:

- The text displayed on the custom tab is set using the **Plural Label** of the custom object, which is entered when creating the custom object. If the tab text needs to be changed, this can be done by changing the **Plural Label** stored on the custom object.
- Salesforce.com recommends that you select the **Append tab for users' existing personal customizations** checkbox. This benefits your users, as they will automatically be presented with the new tab and can immediately access the corresponding functionality without having to first customize their personal settings themselves.
- It is recommended that you do not show tabs – by setting appropriate permissions – so that the users in your organization cannot see any of your changes until you are ready to make them available.
- You can create up to 25 custom tabs in the Enterprise Edition and as many as you require in the Unlimited and Performance Editions.

To create custom tabs for a custom object, navigate to **Setup | Create | Tabs**. Now, select the appropriate tab type and/or object from the available selections, as shown in the following screenshot:



Renaming labels for standard tabs, standard objects, and standard fields

Labels generally reflect the text that is displayed and presented to your users in the user interface and in reports within the Salesforce application.

You can change the display labels of standard tabs, objects, fields, and other related user interface labels so they can reflect your company's terminology and business requirements better. For example, the **Accounts** tab and object could be changed to **Clients**; similarly, **Opportunities** could be changed to **Deals** and **Leads** to **Prospects**. Once changed, the new label is displayed on all user pages.



The **Setup** pages and **Setup** menu sections cannot be modified and do not include any renamed labels. Here, the standard tab, object, and field reference continues to use the default, original labels. Also, the standard report names and views continue to use the default labels and are not renamed.

To change standard tab, objects, and field labels, navigate to **Setup | Customize | Tabs Names and Labels | Rename Tabs and Labels**. Now, select a language, and then click on **Edit** to modify the tab names and standard field labels:

Rename Tabs and Labels [Help for this Page](#)

Make salesforce.com match your organization's terminology by renaming tab and field labels. Use the lists below to select the tab you want to rename in the language you choose. After renaming any tab or field label, remember to update all custom reports, views, templates and other items you have created containing the original name.

Select Language English ▼

Standard Tabs [Standard Tabs Help](#)

Action	Tab Name	Display Label	Renamed	Last Modified
Edit	Accounts	Accounts	<input type="checkbox"/>	
Edit	Activities	Activities	<input type="checkbox"/>	
Edit	Articles	Articles	<input type="checkbox"/>	
Edit	Assets	Assets	<input type="checkbox"/>	
Edit	Campaigns	Campaigns	<input type="checkbox"/>	
Edit	Cases	Cases	<input type="checkbox"/>	

Click on **Edit** to select the tab that you wish to rename.



Although the screen indicates that there is a change in the tab's name, this selection will also allow you to change the labels for the object and fields in addition to the tab name. To change field labels, click through to step 2 in the appropriate screenshot. Enter the new field labels.

Here, we are going to rename the **Accounts** tab to **Clients**. Enter the **Singular** and **Plural** names, and then click on **Next**.

Step 1. Enter the new tab names Step 1 of 2

Save Next Cancel

Tab Accounts
Language English

Singular Client Example: Account
Plural Clients Example: Accounts

Starts with vowel sound



Only the following standard tabs and objects can be renamed:

Accounts, Activities, Articles, Assets, Campaigns, Cases, Contacts, Contracts, Documents, Events, Ideas, Leads, Libraries, Opportunities, Opportunity Products, Partners, Price Books, Products, Quote Line Items, Quotes, Solutions, and Tasks.

Tabs such as **Home, Chatter, Forecasts, Reports, and Dashboards** cannot be renamed.

Step 2. Enter the new field labels Step 2 of 2

Previous Save Cancel

Please review all the auto-populated values below for grammatical accuracy. Edit any **standard field labels** and **other labels** for the selected tab and language.

Tab Accounts
Language English

Standard Field Labels Other Labels

	Singular	Plural	Starts with vowel sound
Account Division	Client Division		<input type="checkbox"/>
Account Name	Client Name	Client Names	<input type="checkbox"/>
Account Number	Client Number		<input type="checkbox"/>
Account Owner	Client Owner	Client Owners	<input type="checkbox"/>
Account Site	Client Site	Client Sites	<input type="checkbox"/>
Address	Address		<input checked="" type="checkbox"/>
Annual Revenue	Annual Revenue		<input checked="" type="checkbox"/>
Billing Address	Billing Address		<input type="checkbox"/>
Billing City	Billing City		<input type="checkbox"/>
Billing Country	Billing Country		<input type="checkbox"/>

Salesforce looks for occurrence of the **Account** label and displays an autopopulated screen that shows where the **Account** text would be replaced with **Client**. This autopopulation of text is carried out for the standard tab, the standard object, and the standard fields. Review the replaced text, amend as required, and then click on **Save**.

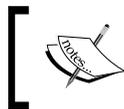
Rename Tabs and Labels Help for this Page ?

Make salesforce.com match your organization's terminology by renaming tab and field labels. Use the lists below to select the tab you want to rename in the language you choose. After renaming any tab or field label, remember to update all custom reports, views, templates and other items you have created containing the original name.

Select Language English

Standard Tabs Standard Tabs Help ?				
Action	Tab Name	Display Label	Renamed	Last Modified
Edit Reset	Accounts	Clients	✓	Paul Goodey , 20/02/2011 04:04
Edit	Activities	Activities	<input type="checkbox"/>	
Edit	Articles	Articles	<input type="checkbox"/>	
Edit	Assets	Assets	<input type="checkbox"/>	
Edit	Campaigns	Campaigns	<input type="checkbox"/>	
Edit	Cases	Cases	<input type="checkbox"/>	

After renaming, the new labels are automatically displayed in the tab, reports, dashboards, and so on.



Some standard fields, such as **Created By** and **Last Modified By**, are prevented from being renamed because they are audit fields that are used to track system information.

You will, however, need to carry out the following additional steps to ensure consistent renaming throughout the system, as these might require manual updates:

- Check all list view names as they do not automatically update and will continue to show the original object name until you change them manually.
- Review standard report names and descriptions for any object that you have renamed.
- Check the titles and descriptions of any e-mail templates that contain the original object or field name and update them as required.
- Review any other items that you have customized with the standard object or field name. For example, custom fields, page layouts, and record types might include the original tab or field name text that is no longer relevant.

If you have renamed tabs, objects, or fields, you can also replace the Salesforce online help with a different URL. Your users can view this replaced URL whenever they click on any context-sensitive help link on an end user page or from within their personal setup options.

Creating custom objects

Custom objects are database tables that allow you to store data that's specific to your organization in Salesforce.com. You can use custom objects to extend the Salesforce functionality or build a new application functionality.



You can create up to 200 custom objects in the Enterprise Edition and 2000 in the Unlimited Edition.

Once you have created a custom object, you can create a custom tab, custom-related lists, reports, and dashboards for users to interact with the custom object data.

To create a custom object, navigate to **Setup | Create | Objects**. Now, click on **New Custom Object**, or click on **Edit** to modify an existing custom object. The following screenshot shows you the resulting screen:

Custom Object Definition Edit Save Save & New Cancel

Custom Object Information ⓘ = Required Information

The singular and plural labels are used in tabs, page layouts, and reports.

Label Example: Account

Plural Label Example: Accounts

Starts with vowel sound

The Object Name is used when referencing the object via the API.

Object Name Example: Account

Description

Context-Sensitive Help Setting

Open the standard Salesforce.com Help & Training window

Open a window using a custom s-control

Open a window using a Visualforce page

Content Name

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, the Record Name for Account is "Account Name" and for Case it is "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name Example: Account Name

Data Type

Optional Features

Allow Reports

Allow Activities

Track Field History

Deployment Status [What is this?](#)

In Development

Deployed

Object Creation Options (Available only when custom object is first created)

Add Notes and Attachments related list to default page layout

Launch New Custom Tab Wizard after saving this custom object

On the **Custom Object Definition Edit** page, you can enter the following:

- **Label:** This is the visible name that is displayed for the object within the Salesforce CRM user interface and is shown on pages, views, and reports, for example.
- **Plural Label:** This is the plural name specified for the object, which is used within the application in places such as reports and on tabs (if you create a tab for the object).
- **Gender (language-dependent):** This field appears if your organization-wide default language expects a gender. This is used for organizations where the default language settings are, for example, Spanish, French, Italian, German, among many others. Your personal language-preference setting does not affect whether the field appears or not. For example, if your organization's default language is English but your personal language is French, you will not be prompted for the gender when creating a custom object.
- **Starts with a vowel sound:** The use of this setting depends on your organization's default language and is a linguistic check that allows you to specify whether your label is to be preceded by *an* instead of *a*, for example, resulting in references to the object as *an Order* instead of *a Order*.
- **Object Name:** This is a unique name that is used to refer to the object. Here, the **Object Name** field must be unique and can only contain underscores and alphanumeric characters. It must also begin with a letter, not contain spaces, not contain two consecutive underscores, and not end with an underscore.
- **Description:** This is an optional description of the object. A meaningful description will help explain the purpose of your custom objects when you are viewing them in a list.
- **Context-Sensitive Help Setting:** This defines what information is displayed when your users click on the **Help for this Page** context-sensitive help link from the custom object record home (overview), edit and detail pages, as well as list views and related lists. The **Help & Training** link at the top of any page is not affected by this setting; it always opens the Salesforce **Help & Training** window.
- **Record Name:** This is the name that is used in areas such as page layouts, search results, key lists, and related lists, as shown next.

- **Data Type:** This sets the type of field for the record name. Here, the data type can be either text or **Auto Number**. If the data type is set to be **Text**, then, when a record is created, users must enter a text value, which does not need to be unique. If the data type is set to **Auto Number**, it becomes a read-only field whereby new records are automatically assigned a unique number.

Enter Record Name Label and Format

The Record Name appears in page layouts, key lists, related lists, lookups, and search results. For example, "Case Number". Note that the Record Name field is always called "Name" when referenced via the API.

Record Name Example: Account Name

Data Type

Display Format Example: A-{0000} [What Is This?](#)

Starting Number

- **Display Format:** As with in the preceding example, this option only appears when the **Data Type** field is set to **Auto Number**. It allows you to specify the structure and appearance of the **Auto Number** field. For example, {YYYY} [MM]-{000} is a display format that produces a four-digit year and a two-digit month prefix to a number with leading zeros padded to three digits. Example data output would include **201203-001**, **201203-066**, **201203-999** and **201203-1234**.

It is worth noting that although you can specify the number to be three digits, if the number of records created crosses 999, the record will still be saved but the automatically incremented number becomes 1000, 1001, and so on.

- **Starting Number:** As described, **Auto Number** fields in Salesforce CRM are automatically incremented for each new record. Here, you must enter the starting number for the incremental count (which does not have to be set to start from 1).
- **Allow Reports:** This setting is required if you want to include the record data from the custom object in any report or dashboard analytics.

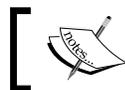


Such relationships can be either a lookup or a master-detail relationship.

Lookup relationships create a relationship between two records so that you can associate them with each other. A master-detail relationship creates a relationship between records where the master record controls certain behaviors of the detail record, such as record deletion and security.

When the custom object has a master-detail relationship with a standard object or is a lookup object on a standard object, a new report type will appear in the standard report category. The new report type allows the user to create reports that relate the standard object to the custom object, which is done by selecting the standard object for the report type category instead of the custom object.

- **Allow Activities:** This allows users to include tasks and events related to the custom object records that appear as a related list on the custom object page.
- **Track Field History:** This enables the tracking of data-field changes on the custom object records, such as who changed the value of a field and when it was changed. Field history tracking also stores the value of the field before and after the edit. This feature is useful for auditing and data-quality measurement and is also available within the reporting tools. You can set field history tracking for a maximum of 20 fields for Enterprise, Unlimited, and Performance Editions.
- **Deployment Status:** This indicates whether the custom object is now visible and available for use by other users. This is useful as you can easily set the status to **In Development** until you are happy with users starting work with the new object.
- **Add Notes & Attachments:** This setting allows your users to record notes and attach files to the custom object records. When this is specified, a related list with the **New Note** and **Attach File** buttons automatically appears on the custom object record page where your users can enter notes and attach documents.



The **Add Notes & Attachments** option is only available when you create a new object.

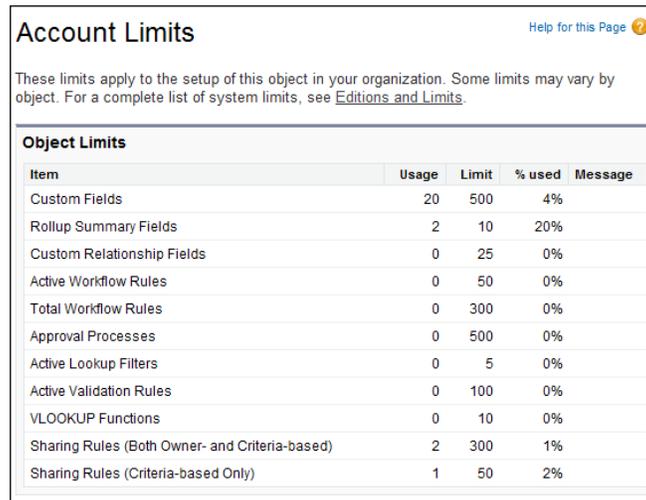
- **Launch the New Custom Tab Wizard:** This starts the custom tab wizard after you save the custom object. The **New Custom Tab Wizard** option is only available when you create a new object.

Object Limits

You can access **Object Limits** pages when planning how to customize a particular object or to monitor the current usage and limits, such as the number of custom fields or rules applied.

Standard objects

To access the standard **Object Limits** page, navigate to **Setup | Customize**. Click on the name of the desired standard object, and then click on **Limits**, as shown in the following screenshot (for the **Account** object):



Item	Usage	Limit	% used	Message
Custom Fields	20	500	4%	
Rollup Summary Fields	2	10	20%	
Custom Relationship Fields	0	25	0%	
Active Workflow Rules	0	50	0%	
Total Workflow Rules	0	300	0%	
Approval Processes	0	500	0%	
Active Lookup Filters	0	5	0%	
Active Validation Rules	0	100	0%	
VLOOKUP Functions	0	10	0%	
Sharing Rules (Both Owner- and Criteria-based)	2	300	1%	
Sharing Rules (Criteria-based Only)	1	50	2%	

Here, you can see usage details for these: **Custom Fields**, **Rollup Summary Fields**, **Custom Relationship Fields**, **Active Workflow Rules**, **Total Workflow Rules**, **Approval Processes**, **Active Lookup Filters**, **Active Validation Rules**, **VLOOKUP Functions**, **Sharing Rules (Both Owner- and Criteria-based)**, and **Sharing Rules (Criteria-based Only)**.

Custom objects

To view information about the usage of various fields and rules that have been created on a custom object, you can access the **Object Limits** window displayed on a custom-object-definitions-related list at the bottom of a custom object definition page.



When an item reaches 75 percent or more of the limit allowed for the object, a warning message appears that identifies what can be done to reduce the amount of usage. The object limit percentages display values that are truncated and not rounded up. For example, if your organization reaches 79.55 percent of the limit for an item, the limit percentage displays 79 percent.

Creating custom object relationships

The considerations to be observed when creating object relationships are as follows:

- Create the object relationships as a first step before you start to build the custom fields, page layouts, and any related list
- The **Related To** entry cannot be modified after you have saved the object relationship

 Each custom object can have up to two master-detail relationships and up to 25 total relationships.

- When you're planning to create a master-detail relationship on an object, be aware that it can only be created before the object contains record data
- Clicking on **Edit List Layout** allows you to choose columns for the key views and lookups
- The **Standard Name** field is required for all custom object-related lists and also for any page layouts

Creating custom fields

Before you begin to create custom fields, it is worth spending some time to first plan and choose the most appropriate type of field to be created. You can create many different custom field types in Salesforce CRM, including text, number, currency, as well as relationship types that enable lookup, master-detail, and hierarchical relationships.

Adding custom fields can be carried out by navigating to the field area of the appropriate object:

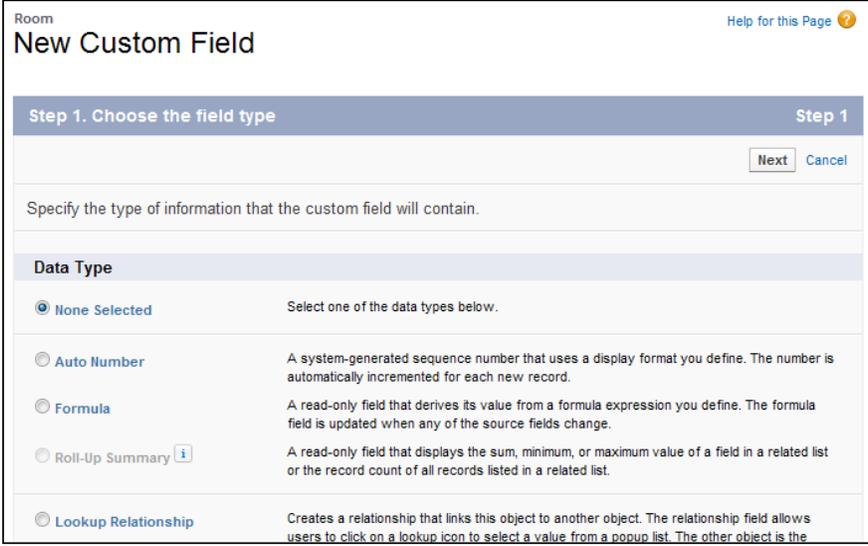
- For standard objects, navigate to **Setup | Customize**. Now, select the appropriate object from the **Customize** menu, click on **Fields**, and then click on **New** in the **Custom Fields & Relationships** section of the object page.
- For custom task and event fields, navigate to **Setup | Customize | Activities | Activity Custom Fields**. Now, click on the **New** button.
- For custom objects, navigate to **Setup | Create | Objects**. Now, select one of the custom objects in the list. Next, click on **New** in the **Custom Fields & Relationships** dependencies and field history tracking.

Within the field setup pages, you can set field dependencies and field history tracking for the object. Field history tracking captures information for the date and time, the nature of the change, and who made the change. A dependent field is a picklist field for which the valid values depend on the value of another field.

Whenever history tracking is set, a separate history data object is created for the object. This history data comprises the record ID and the history-tracked field names whose value has been changed. Here, both the old and the new record values are recorded. This is covered later in this chapter in the *Custom field governance* section.

 Field dependencies and field history tracking is not available for task and event fields and are described in more detail later in this chapter.

Choose a data type for the field to be created. The following screenshot shows you the first page (step 1) where a full list of data types (described in detail later) are available to choose from:



Room Help for this Page ?

New Custom Field

Step 1. Choose the field type Step 1

[Next](#) [Cancel](#)

Specify the type of information that the custom field will contain.

Data Type

- None Selected** Select one of the data types below.
- Auto Number** A system-generated sequence number that uses a display format you define. The number is automatically incremented for each new record.
- Formula** A read-only field that derives its value from a formula expression you define. The formula field is updated when any of the source fields change.
- Roll-Up Summary** A read-only field that displays the sum, minimum, or maximum value of a field in a related list or the record count of all records listed in a related list.
- Lookup Relationship** Creates a relationship that links this object to another object. The relationship field allows users to click on a lookup icon to select a value from a popup list. The other object is the

Some data types are only available for certain configurations. For example, the **Master-Detail Relationship** option is available only for custom objects when the custom object does not already have a master-detail relationship. The **Roll-up Summary** option is only available for objects defined as master in the master-detail relationship and is used to record an aggregate of the child records using functions such as SUM, MAX, and MIN (these are described in detail later in this chapter).



Field types not listed in custom field types might appear if your organization installed a package from AppExchange that uses these custom field types.

Click on **Next** and enter a **Field Label**. **Field Name** is a mandatory field and must be unique within the Salesforce CRM application. There are also some restrictions on what can be entered and what not. Here, you can only enter alphanumeric characters and underscores. In addition, the text must start with a letter; it cannot include spaces, it cannot contain two consecutive underscores, and the final character must not be an underscore.

The screenshot shows a Salesforce configuration page titled "Step 2. Enter the details". At the top right, it says "Step 2 of 4" and has buttons for "Previous", "Next", and "Cancel". The form contains the following fields:

- Field Label:** A text input field with an information icon (i).
- Default Value:** Two radio buttons, "Checked" and "Unchecked", with "Unchecked" selected.
- Field Name:** A text input field with an information icon (i).
- Description:** A text area with up and down arrow controls on the right.
- Help Text:** A text area with an information icon (i) and up and down arrow controls on the right.



Make both the custom field name and label unique in your application

Ensure that the custom field name and label are unique and not the same as any existing standard or custom field for that object. Creating identical values might result in unexpected behavior when you reference that name in a merge field. If a standard field and custom field have matching names or labels, the merge field displays the value of the custom field. If two custom fields have matching names or labels, the merge field might not display the value of the field you expect. For example, if you create a field label called `Phone`, the field name automatically populates as `Phone_c`. If you also have a standard field with the **Phone** label, the merge field might not be able to distinguish between the standard and custom field names. Make the custom field name and label unique by adding a suffix to each, such as `Phone_Custom` and `Phone_Custom_c`, respectively.

For relationship fields, choose the object that you want to associate with it.



 The number of custom fields allowed per object is 500 for both the Enterprise and Unlimited Editions of Salesforce. Relationship fields count toward these custom-field limits.

Enter any field attributes. In this example, a new checkbox field is set as **Checked** by default:



Object relationship fields allow you to create a lookup filter that can be used to further control the associated returned records and lookup dialog results of the field. These are available for the **Lookup**, **Master-detail**, and **Hierarchical** relationship fields. Here, you can select multiple fields and selection criteria to restrict the results. This is presented in an additional step of the field-creation process and is available in the **Lookup Filter** section, which is available on the **Step 3. Enter the label and name for lookup field** setup page.

Click on **Next** to continue and specify the field's access settings for each profile, as shown in the following screenshot:

Step 3. Establish field-level security Step 3 of 4

Previous Next Cancel

Field Label Air Conditioned
Data Type Checkbox
Field Name Air_Conditioned
Description

Select the profiles to which you want to grant edit access to this field via field-level security. The field will be hidden from all profiles if you do not add it to field-level security.

Field Level Security for Profile	Visible	Read-Only
Authenticated Website	<input type="checkbox"/>	<input type="checkbox"/>
Contract Manager	<input type="checkbox"/>	<input type="checkbox"/>
Custom: Marketing Profile	<input type="checkbox"/>	<input type="checkbox"/>
Custom: Sales Profile	<input type="checkbox"/>	<input type="checkbox"/>
Custom: Support Profile	<input type="checkbox"/>	<input type="checkbox"/>
Customer Portal Manager	<input type="checkbox"/>	<input type="checkbox"/>

To set the field-level security, enable the following settings:

The Visible checkbox	The Read-Only checkbox	Result
Checked	Not Checked	Users can view and edit the field
Checked	Checked	Users can view but not edit the field

Click on **Next** and choose the page layouts to which you would want to add the new field, as shown in the following screenshot:

Step 4. Add to page layouts Step 4 of 4

Previous Save & New Save Cancel

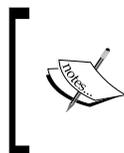
Field Label Air Conditioned
Data Type Checkbox
Field Name Air_Conditioned
Description

Select the page layouts that should include this field. The field will be added as the last field in the first 2-column section of these page layouts. The field will not appear on any pages if you do not select a layout.

To change the location of this field on the page, you will need to customize the page layout.

Add Field	Page Layout Name
<input checked="" type="checkbox"/>	Room Layout

The new field is automatically positioned on the page layout as the final field in the first two-column section. However, there is an exception for **Text Area (Long)** and **Text Area (Rich)** fields. Due to their double width, these fields are placed as the final field in the first one-column section in the page layout.



For user custom fields, the field is automatically added to the bottom of the user detail page.

For universally required fields, you cannot remove the field from page layouts or make it read-only.

Click on **Save** to finish or on **Save & New** to create more custom fields.

For relationship fields, choose whether you want to create a related list that displays information about the associated records or not. You can choose to put the related list on any page layout for that object.

To change the label of the custom-related list as it will appear on the page layouts of the associated object, edit the **Related List Label** field. This is covered later in this chapter in the *Page layouts* and *Related lists* sections.

To add the new related list to page layouts that users have already customized, check the **Append-related list to users' existing personal customizations**.

Custom field data types

When creating a custom field, the first step is to select the appropriate type for the field. There are many different field types available in Salesforce that allow the storage of records of various data types, such as numbers, dates, and percentages. The upcoming sections describe the data types that are available.

The following screenshot shows the available data types:

Chapter 3 - Configuration in Salesforce CRM

Master Detail to Account: Company X

Lookup to Account: Company X

Auto Number: A-0001

Number: 123.456

Checkbox:

Percent: 10,000

Currency: 100.00

Phone: (555) 123-4567

Date: 7/27/2012 [9/24/2011]

Picklist: One

Date/Time: 7/27/2012 10:00 AM [9/24/2011 4:20 PM]

Picklist (Multi-Select): Available: Six, Chosen: Four, Five

Email: me@widgesxyz.com

Text Area (Long): WorldHello WorldHello WorldHello
WorldHello WorldHello WorldHello
WorldHello WorldHello WorldHello
WorldHello WorldHello WorldHello

Text Area (Rich):

Text Area: 1 remaining

Text: WorldHello WorldHello

URL: www.widgesxyz.com

Save Save & New Cancel

Auto Number

An **Auto Number** field produces a unique number that is automatically incremented for each saved record. As such, this is a read-only field where the maximum length is 30 characters, of which 20 are reserved for further prefix or suffix text that you can specify.

Checkbox

Checkbox allows your users to set or unset a value to mark the attribute as either true or false.

 When using a checkbox field in a report, use `True` for values that are checked values and `False` for unchecked values. The import wizards and the weekly export tool use 1 for checked values and 0 for unchecked values.

Currency

Salesforce provides a **Currency** field to specifically capture a monetary value. Here, the Salesforce CRM application applies currency-related codes that are applied when working with that field record.

 Values lose precision after 15 decimal places.

Date

A **Date** field provides a way for your users to either pick a date from a pop-up calendar or manually key in the date. Your users can also enter the current date by clicking on the date link positioned to the right of the field.

Date/Time

A **Date/Time** field provides a way for your users to either pick a date from a pop-up calendar or manually key in the date and the time of the day. Your users can also enter the current date and time by clicking on the date and time link positioned to the right of the field. Here, the time of day includes the A.M.-P.M. notation.

Email

An **Email** field provides us with the capability to store an individual's e-mail address. The Salesforce CRM application provides a very robust method to verify the correct format of e-mail addresses before they are allowed to be saved. If this field is specified for contacts or leads, users can choose the address when clicking on **Send an Email**.



You cannot use custom e-mail fields for mass e-mails. Mass e-mails can only be sent to an e-mail address in a standard e-mail field.

Formula

A **Formula** field enables a method to automatically calculate a value that is obtained from other fields or values stored within Salesforce CRM. These referenced fields are known as merge fields. Formula fields are very powerful and flexible mechanisms. However, a formula field cannot be set to reference itself within a formula irrespective of whether the reference is made directly or indirectly. Further information concerning formulas is covered later in this chapter in the *Building formulas* section. Salesforce uses the round-half up, tie-breaking rule for numbers in formula fields. For example, 12.345 becomes 12.35 and -12.345 becomes -12.34.

Geolocation

The geolocation custom field allows you to identify locations by their latitude and longitude and calculate the distance between locations.



Geolocation is a compound field that counts toward an organization's limits as three custom fields: one for latitude, one for longitude, and one for internal use.

You can then use the geolocation field with the `DISTANCE` and `GEOLOCATION` formula functions to calculate the distance between locations. For example, you can calculate the distance between two geolocation fields (such as between the warehouse and an account-shipping address) or between a geolocation field and any fixed latitude-longitude coordinate.

The geolocation field is currently in beta release and has the following limitations:



- History tracking is not available on geolocation fields
- Geolocation fields cannot be used on custom settings
- Geolocation fields cannot be included in reports, dashboards, validation rules, Visual workflow, workflow, or approvals
- Geolocation fields cannot be searched
- Geolocation fields cannot be accessed within the Schema Builder
- `DISTANCE` and `GEOLOCATION` formula functions are available only when creating formula fields or using them in Visual Workflow

Lookup Relationship

The **Lookup Relationship** field creates a relationship between two records so that you can associate them with each other. For example, opportunities have a lookup relationship with cases that enable you to associate a specific case with an opportunity.

A lookup relationship creates a field that allows users to click on a lookup icon and select another record from a pop-up window. On the associated record, you can display a related list to show all of the records that are linked to it, and you can create lookup relationship fields that link to users and custom or standard objects. See the *Building relationship fields* section later in this chapter for further options.

Master-Detail Relationship

The **Master-Detail Relationship** field creates a parent-child type relationship between records where the master record controls certain behaviors, such as security and record deletion, of the detail record.

Master-detail relationship fields can only be created on custom objects that relate to a standard object and not the other way round. If the master record is deleted, then all detail records are also deleted. You can create up to two master-detail relationship fields the custom object. See the *Building relationship fields* section for further options, discussed later in this chapter.



As a best practice, Salesforce.com recommends that you do not exceed 10,000 child records for a master-detail relationship.

Hierarchical Relationship

The **Hierarchical Relationship** field type forms a hierarchical lookup relationship between relevant objects. For the user hierarchical relationship, users can use a lookup field to associate one user with another. For example, you can create a custom hierarchical relationship field to store each user's direct manager. See the *Building relationship fields* section for further options.



This type of lookup relationship is available only for the user object.

Number

The **Number** field (data type) can be used to enter any number, with or without a decimal place (the number of decimal places can be specified), and be saved as a real number with any leading zeros removed.

Percent

With **Percent** fields in Salesforce CRM, a percentage sign is automatically appended to the entered number.



Field values lose precision after 15 decimal places. If the decimal value is greater than 15 and a percent sign is added to the number, a runtime error occurs.

Phone

The **Phone** field allows the users in your organization to enter any telephone number. While saving the record, the Salesforce CRM application will attempt to format it into a known phone format.

When your users enter phone numbers in **Phone** fields, Salesforce keeps the phone number format that has been entered. However, if the **Locale** field is set to **English (United States)** or **English (Canada)**, 10-digit phone numbers and 11-digit numbers that start with 1 are automatically formatted as **(800) 555-1234** when you save the record. If you do not want this formatting for a 10- or 11-digit number, you can enter a + before the number, for example, **+44 117 123 4567**.



If you are using Salesforce CRM Call Center, custom phone fields are displayed with the button, allowing the click-to-dial functionality. Consequently, Salesforce.com recommends that you do not use a custom phone field for fax numbers.

Picklist

The **Picklist** field allows users to choose a value from a set of predefined text values. The maximum length of the text values is 255 characters.

Picklist (Multi-select)

The **Picklist (Multi-select)** field allows users to choose more than one picklist value from a set of predefined text values. The maximum length of the text values is 255 characters. When saving and viewing, the data is stored as text along with semicolons, which are used to separate the individual picklist values.

Roll-Up Summary

A **Roll-Up Summary** field (or RUS) is used to automatically display the summarized values of the related records. This can be a record count of related records or a calculation of the sum, minimum, or maximum values of the related records.



The records must be directly related to the selected record and on the detail side of a custom master-detail relationship with the object that contains the roll-up summary field. For example, a custom account field called **Total Number of Branches** displays the number of branches the custom object records in the branch-related list for **Accounts**.

Text

The **Text** field allows users to enter any combination of alphanumeric characters. The maximum length of the text value is 255 characters.

Text (Encrypted)

The **Text (Encrypted)** field allows users to enter any combination of alphanumeric characters. The text is then stored in an encrypted form. As an example, you can create a credit card number field named **Credit Card Number** with a mask type of **Credit Card Number** and a mask character of **X**. When users enter data in this field, it is encrypted and stored in the database. When users without the **View Encrypted Data** permission view the field, Salesforce displays the mask (for example, **XXXX-XXXX-XXX-1234**) instead of the value that was originally entered.

 For the encrypted text, you can set a maximum length of up to 175 characters.

Encrypted fields are encrypted with 128-bit master keys and use the **Advanced Encryption Standard (AES)** algorithm.

 Your master encryption key can be archived, deleted, and imported using the **Master Encryption Key Management** feature, which is made available by sending a request to Salesforce customer support.

Text Area

The **Text Area** field allows users to enter alphanumeric characters on separate lines. The maximum length of the text value is 255 characters and a warning is displayed when the number is about to be reached (as shown earlier).

Text Area (Long)

The **Text Area (Long)** field provides for the storage of up to 32,000 characters that are displayed on separate lines – similar to a **Text Area** field. However, you can specify a lower maximum length of this field type between 256 and 32,000 characters.

 Every time you press *Enter* within a long text area field, a line break and a return character are added to the text. These two characters count toward the 32,000 character limit.

This data type is not available for activities or products on opportunities. Only the first 254 characters in a rich-text area or a long-text area are displayed in a report.

Text Area (Rich)

Using the **Text Area (Rich)** data type, your users are provided with a text field that has an embedded toolbar. This toolbar allows simple formatting of the text and provides the addition of images and URL web links.

 The maximum size for uploaded images is 1 MB and only the GIF, JPEG, and PNG file types are currently supported.

Also, the toolbar allows your users to undo, redo, bold, italicize, underline, strikethrough, add a hyperlink, upload or link to an image, and add a numbered or non-numbered list.

The maximum field size is 32,000 characters, which is inclusive of all the formatting and HTML tags, and only the first 254 characters in a rich text area or a long text area will be displayed in a report.

URL

The **URL** field allows users to enter a web link.

 The **URL** field can store up to 255 characters. However, only the first 50 characters are displayed on the record detail pages.

When the web link is clicked on, the Salesforce CRM application opens a new browser window that shows you the web page.

 **When entering a value in currency or numbers fields**
Whenever your users enter values into either a currency amount or a number field, they can use the k, m, or b shortcuts to indicate thousands, millions, or billions. For example, when you enter 7k, it is displayed as 7,000.

Dependent picklists

Dependent picklists are picklists (including multiselect picklists) in which the values available in the picklist depend on the value of another field, which is called the controlling field.

 Controlling fields can be any picklist or checkbox field within the same record

Controlling fields that are picklists are fields with at least one or fewer than 300 values. These are used to help with efficient, accurate data entry and help to achieve consistent data.

- To define a dependent picklist, navigate to the field's area of the appropriate object.
- For standard objects, this is carried out by navigating to **Setup | Customize | (select the appropriate standard object) | Fields**. Then, click on **Field Dependencies**.
- For custom objects, navigate to **Setup | Create | Objects | (select the appropriate custom object)**. Then, click on **Field Dependencies**.

Now, click on **New**, choose a controlling field and dependent field, and then click on **Continue**.

Use the field-dependency matrix to specify the dependent picklist values that are available when a user selects each controlling field value, as shown in the following screenshot:

Edit Field Dependency Help for this Page ?

Controlling Field: Stage
 Dependent Field: Reason Lost

▼ Instructions

- Double click on a cell to toggle its visibility for the Controlling Field value shown in the column heading.
- To change multiple cells at once, select multiple cells and then click the Include Values or Exclude Values button to change the visibility of all selected cells at once.
- Use SHIFT + click to select a range of adjacent cells. Use CTRL + click to select multiple cells that are not adjacent.
- Use the Preview button to test the results.

Click button to include or exclude selected values from the dependent picklist:

Showing Columns: 6 - 10 (of 10) < Previous Next > View All > Go to					
Stage:	Perception Analysis	Proposal/Price Quote	Negotiation/Review	Closed Won	Closed Lost
Reason Lost:	No Budget				
	Missing Product Features				
	Better Price				
	Cost / Value				

Click button to include or exclude selected values from the dependent picklist:

Finally, click on **Save**.



Please note the following points:

- Checkbox fields can be controlling fields but not dependent fields
- You can set default values for controlling fields but not for dependent picklists
- Multiselect picklists can be dependent picklists but not controlling fields
- Standard picklist fields can be controlling fields but not dependent fields
- Custom picklist fields can be either controlling or dependent fields
- The maximum number of values allowed in a controlling field is 300

Building relationship fields

When building lookup and master-detail relationship fields, there are various options and settings that you can set, which will enforce data integrity. These options and settings are covered in the next section.

Lookup relationship options

When you create a lookup field on an object, you can choose whether the lookup field is required or is optional. If it is set as optional, you can choose one of the following three actions if the lookup record is deleted:

- Clear the value of this field
- Don't allow the deletion of the lookup record that's part of a lookup relationship
- Delete this record as well

The clear the value of this field option

The clear the value of this field is the default option and is a good choice when the field does not have to contain a value from the associated lookup record.

The don't allow deletion of the lookup record that's part of a lookup relationship option

The don't allow deletion of the lookup record that's part of a lookup relationship option prevents the lookup record from being deleted and is a good choice to restrict deletions if you have dependencies, such as workflow rules, based on the lookup relationship.

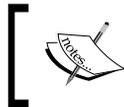
The delete this record also option

The delete this record also option works similar to the master-detail relationship and deletes the record whenever the lookup record is deleted. However, such a deletion on a lookup relationship is known as cascade-delete and bypasses security and sharing settings. As a result, users can delete records when the lookup record is deleted even if they do not have access to the related records.



The cascade-delete feature is disabled by default and is available only by sending a request to Salesforce support.

This option is a good choice when the lookup field and its associated records are highly coupled and you need to delete related data whenever the lookup data is removed.



This option is only available within custom objects and is not available for standard objects. However, the lookup field object can be either a standard or custom object.

Master-detail relationship options

When you create a **Master-detail** field on an object, you can choose **Allow Reparenting Option**.

Allow Reparenting Option

By default, records in master-detail relationships cannot be reparented. However, you can allow child records in a master-detail relationship to be reparented to a different parent by selecting **Allow Reparenting Option** in the master-detail relationship definition.

Lookup filters

Lookup filters are used to restrict the values and lookup dialog results for the **Lookup**, **Master-detail**, and **Hierarchical** relationship fields.

You can specify the restrictions by configuring filter criteria that compare fields and values based on:

- The current record
- The related object (via the **Lookup**, **Master-detail**, or **Hierarchical** field)
- The current user's record, permissions, and role
- The records directly associated to the related object

As an example, you can:

- Restrict the **Contact Name** field on an **Account** record to allow only those contacts that have a custom status of *Active*, filtering out inactive contacts
- Restrict the **Contact Name** field on a case record to allow only those contacts that are associated with the **Account** record specified in the **Account Name** field in the **Case** record
- Restrict the **Account Name** field on an **Opportunity** record to allow only those users who have an **International** profile to create or edit **Opportunity** records for accounts outside the United States

Optionally, you can click on **Insert Suggested Criteria** to choose from a list of lookup filter criteria that the Salesforce CRM system suggests based on the defined relationships between the objects in your organization.

You can make lookup filters either required or optional.

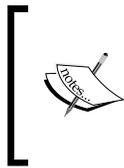
For fields with required lookup filters, only values that match the lookup filter criteria appear in the lookup dialog. Invalid values manually entered into the field also prevent the record from saving; Salesforce CRM displays an error message, which you can set.

For fields with optional lookup filters, only values that match the lookup filter criteria appear in the lookup dialog initially. However, users can click on the **Show all results** link in the lookup dialog to remove the filter and view all search result values for the lookup field. Optional lookup filters also allow users to save values that do not match the lookup filter criteria.

Building formulas

Custom formula fields require additional settings as specified by the Salesforce CRM application. These are carried out using the following actions and steps:

1. Create the **Formula** field.
2. Choose the data type for the field based on the output of the calculation.
3. Enter the number of decimal places for currency, number, or percent data types.



The setting for the number of decimal places is ignored for currency fields in multicurrency organizations. Instead, the decimal places for your currency setting apply. Salesforce uses the round-half up tie-breaking rule for numbers in formula fields. For example, 12.345 becomes 12.35 and -12.345 becomes -12.34.

4. Click on **Next** to display the formula creation screen.

Basic formula

To create a basic formula that passes specific Salesforce data, select the **Simple Formula** tab, choose the field type in the **Select Field Type** drop-down list, and choose one of the fields listed in the **Insert Field** drop-down list.

To insert an operator, choose the appropriate operator icon from the **Insert Operator** drop-down list. Here, you can choose between these operators: **+** Add, **-** Subtract, ***** Multiply, **/** Divide, **^** Exponentiation, **(** Open Parenthesis, **)** Close Parenthesis, **&** Concatenate, **=** Equal, **<>** Not Equal, **<** Less Than, **>** Greater Than, **<=** Less Than or Equal, **>=** Greater Than or Equal, **&&** And, and **||** Or.

Advanced formula

The basic formula feature is quite restricted and you will most likely seek to create more complicated formulas that can be performed by selecting the **Advanced Formula** tab.

Within this tab, click on **Insert Field**, choose a field, and then click on **Insert**.

You can now include merge fields along with advanced operators as well as functions, which are prebuilt Salesforce CRM formulas that you can invoke and pass your input values to.

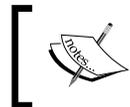


Function description and example usage

Select a function and click on **Help** to view a description and examples of formulas using that function.

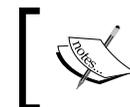
The following are the steps to create a new custom field:

1. Click on **Check Syntax** to check your formula for errors.
2. Enter a description of the formula in the **Description** box.
3. If your formula references any number, currencies, or percent fields, choose an option to handle blank fields. To give any blank fields a zero value, choose **Treat blank fields as zeros**. To leave these fields blank, choose **Treat blank fields as blanks**.
4. Click on **Next**.
5. Set the field-level security to determine whether the field should be visible for specific profiles or not, and click on **Next**.
6. Choose the page layouts that should display the field. The field is added as the last field in the first two-column section on the page layout. For user custom fields, the field is automatically added to the bottom of the user detail page.



Formula fields are automatically calculated. Therefore, they are not visible on edit pages and are read-only on record detail pages. Formula fields do not update last-modified date fields

7. Click on **Save** to finish or on **Save & New** to create more custom fields.



Formula fields have character and byte size limits and cannot contain more than 3,900 characters

Building formulas – best practices

Some best practices and methods to improve the creation and maintenance of formula fields are as follows:

- Formatting with carriage returns and spacing
- Commenting

Formatting with carriage returns and spacing

Take a look at the following formula:

```
Sales Tax (Percent) =  
IF(TEXT(Account.Market__c) = "US", IF(TEXT(Account.State__c) =  
"California", 0.0925, IF(TEXT(Account.State__c) = "Nevada", 0.081,  
IF(TEXT(Account.State__c) = "Utah", 0.0835, 0) )) , 0)
```

To improve the readability of formula fields, you can add spacing and carriage returns. The preceding formula can be made far easier to understand simply by adding spaces and carriage returns, as follows:

```
Sales Tax (Percent) =  
IF( TEXT(Account.Market__c) = "US",  
    IF(TEXT(Account.State__c) = "California", 0.0925,  
    IF(TEXT(Account.State__c) = "Nevada", 0.081,  
    IF(TEXT(Account.State__c) = "Utah", 0.0835, 0) ))  
, 0)
```

Commenting

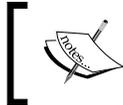
Salesforce CRM allows you to put comments in your formulas. These are sections of text that are not run as part of the formula and are typically used to make notes about the formula code, especially if it is particularly complicated. Comments must start with a forward slash followed by an asterisk (/*) and must finish with an asterisk followed by a forward slash (*/).

Comments are useful for explaining specific parts of a formula to other system administrators who're viewing the formula definition. Look at the following code block as an example:

```
Sales Tax (Percent) =  
/* value only set for US opportunities */  
IF( TEXT(Account.Market__c) = "US",  
/* Check for the US State of the Account record and set accordingly */  
    IF(TEXT(Account.State__c) = "California", 0.0925,  
    IF(TEXT(Account.State__c) = "Nevada", 0.081,  
    IF(TEXT(Account.State__c) = "Utah", 0.0835, 0) ))  
)  
, 0)
```

Carefully using comments to prevent parts of the formula from being activated allows you to test and verify the syntax as you construct and iron out bugs in the formula. However, if you try to comment out the entire formula as syntax, an error is shown. Also, you will experience a syntax error if you try to place comments within other comments because this is not supported in the Salesforce CRM application:

```
/* /* comment */ */
```



Including comments and formatting with carriage returns and spacing adds to the number of characters used and, therefore, counts against the character and byte size limits

Building formula text and compiled character size limits

There is a text character and byte size limit of 3,900 characters and a limit of 5,000 characters for the compiled characters for formulas.

When this limit is reached, you will be unable to save the formula field and will be presented with the following error:

```
Compiled formula is too big to execute (7,085 characters).
Maximum size is 5,000 characters.
```

It is common to encounter these limits when building complicated formula field calculations, particularly when building formulas that reference other formula fields. While there is no way to increase this limit, there are some methods to help avoid and work around these limitations; they are listed as follows:

- Use the `CASE` function for branch conditions
- Use algebra

For formulas that use multiple branch conditions to derive the values, as in the preceding example formula, check whether the market is `US` and the state is `California`, `Nevada`, or `Utah`. You can replace the nested `IF` statements and use the `CASE` statement instead.

Nested IF statements often result in larger compiled sizes where the IF function is used multiple times, as shown in our example:

```
IF(TEXT(Account.State__c) = "California", 0.0925,  
IF(TEXT(Account.State__c) = "Nevada", 0.081,  
IF(TEXT(Account.State__c) = "Utah", 0.0835, 0) ))
```

Using the CASE statement can provide better logic and often results in a smaller compiled size for the formula:

```
IF( TEXT(Account.Market__c) = "US",  
CASE(Account.State__c,  
"California", 0.0925,  
"Nevada", 0.0685,  
"Utah", 0.0475, 0) ,  
0)
```

Using algebra

The compiled size of formula fields increases as you increase the number of fields that are referenced. This is compounded when you are referencing fields that are themselves formula fields. A way to reduce the overall size is to use algebra to avoid the need to reference fields wherever possible. The following example shows you how the `Item_Price__c` and `Support_Price__c` fields are used multiple times:

```
Total Price =  
(Item_Price__c + (Item_Price__c * Sales_Tax__c)) +  
(Support_Price__c + (Support_Price__c * Sales_Tax__c))
```

To reduce the compiled size, use simple algebra to avoid multiple uses of the `Item_Price__c` and `Support_Price__c` fields, as shown in the following example:

```
Total Price =  
(Item_Price__c * (1 + Sales_Tax__c)) +  
(Support_Price__c * (1 + Sales_Tax__c))
```

Formula field size limit workarounds

There might be situations where the logic that is required for a formula is simply too complex for the current size limitations in formula fields. The proven methods to overcome this are to implement a solution using either of the following:

- Workflow field updates
- Apex trigger updates

There are two ways in which workflow field updates can help provide a formula logic workaround. Firstly, larger and more complex formulas can be saved using the formula-building function within the workflow mechanism. Secondly, large formula logic can be decomposed into smaller functions of resulting data. For example, you could create simple formulas that get the data fed from fields that have been updated by multiple workflow field updates.

Workflows are covered in detail later in this book. However, the general approach to implementing a workflow field update to provide a solution to the formula field limit is to do as follows:

- Create a nonformula field on the object, such as a currency or number field, in place of the desired formula field. Administrators often identify this field with a suffix to indicate that it is a workflow field – for example, **Total Price (workflow)**. This field is then set as read-only on page layouts, as the field can be considered a system field (as it should not be available for manual updating).
- Create a workflow rule that will always fire.
- Create a field update with an appropriate formula to update the workflow field – **Total Price (workflow)** in our preceding example.

Any subsequent formulas can reference the populated field. The disadvantages to this workaround are that creating many workflows can add to the complexity of the application and might eventually introduce performance issues. Also, whenever an object has multiple complex workflows assigned, the order in which the workflows are evaluated cannot always be guaranteed, which if not properly maintained, can lead to subtle data discrepancies.

Custom field governance

Controlling the creation of fields is necessary in order to avoid adding unnecessary new fields in Salesforce. Without appropriate field creation governance, there is a risk of producing an application with a complex data structure that provides a poor user experience.

This issue can often be observed due to the ease of creating new custom fields. However, there are other causes, such as the following:

- Configuring spontaneous responses to end user field creation requests without gathering full requirements
- Lack of specification or understanding of reporting requirements for field usage

- Creation of fields that are too specific for common uses, thus driving the need to create ever more fields
- Lack of knowledge or awareness of existing fields that could be used rather than creating new ones

As the number of unnecessary fields increases, users will find it ever more difficult to enter the correct data into the correct fields. Therefore, the amount of entered data is reduced along with users' satisfaction, because the application requires less effort to work with. It is all too easy for your users to become dissatisfied, and this can lead to less overall usage and hence poor data quality due to lack of user participation.

Addressing the issue

Create new fields with care because, as each new custom field is added, your application structure increases in complexity. As a system administrator, you are responsible for knowing which fields are used, where they appear on **Page Layouts**, and which fields are required for reporting.

If the benefits and long-term use for a new field cannot be easily understood, it is unlikely to be of much use. One method to help determine its use is to consider where and how the proposed new field would be used. If it is never going to be reported, it might be worth querying its purpose and value. The following considerations can be made when creating new fields.

More generic field names

Try to make your field names more generic so that they can serve multiple purposes. In some situations, different business units share objects but track different information. Although they might have different requirements, they can often share fields. Here, you need to be proactive, forward-thinking, and reach out to the business and propose fields that can be used across multiple business units.

Field history tracking

Often, there are unnecessary date fields that are used to track milestones or data-processing dates. With native field history tracking, these milestones can be tracked and reported without the need to always create new fields.

Field history tracking can be applied on certain custom and standard fields for custom objects and these core standard objects: **Accounts, Cases, Contacts, Contracts, Leads, and Opportunities**, using the **Set History Tracking** button as shown in the following screenshot:

Account Fields [Help for this Page](#) ?

This page allows you to specify the fields that can appear on the Account page. You can create up to 500 Account custom fields.

Note that deleting a custom field will delete any filters that use the custom field. It may also change the result of Assignment or Escalation Rules that rely on the custom field data.

Account Standard Fields [Account Standard Fields Help](#) ?

Action	Field Label	Field Name	Data Type	Controlling Field
	Account Name	Name	Name	

Upon clicking on the **Set History Tracking** button, a page appears, displaying the activation of fields history tracking and the selection of the fields to be tracked, as shown in the following screenshot:

Account Field History [Help for this Page](#) ?

Enable Account History

This page allows you to select the fields you want to track on the Account History related list. Whenever a user modifies any of the fields selected below, the old and new field values are added to the History related list as well as the date, time, nature of the change, and user making the change. Note that multi-select picklist and large text field values are tracked as edited; their old and new field values are not recorded.

[Deselect all fields](#)

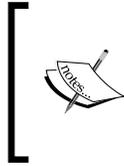
Track old and new values	
Account Name <input type="checkbox"/>	Account Number <input type="checkbox"/>
Account Owner <input type="checkbox"/>	Account Site <input type="checkbox"/>
Account Source <input type="checkbox"/>	Active <input type="checkbox"/>
Annual Revenue <input type="checkbox"/>	Billing Address <input type="checkbox"/>
Customer <input type="checkbox"/>	Data.com Key <input type="checkbox"/>

Changes to fields that have been set up for field history tracking will see a new entry to the object's history-related list whenever changes are made to records (where that field is modified). All entries include the date, time, details of the change, and the name of the user that made the change.



Not all field types can have their history tracked. Changes to field types greater than 255 characters are tracked as edited; their old and new values are not recorded.

There is a maximum of 20 fields per object that can be set to be tracked.



Field history data does not count against your organization's storage limit; however, at the time of writing, Salesforce.com is planning to move toward a policy of deleting field history data that is older than 18 months. Here, they recommend establishing your own field history retention policy, such as extracting the data from the system.

Milestone objects

Create milestone objects and related lists to avoid hardcoding date fields on a record. For example, avoid creating fields to track dated historical financial information within an object. Here, you might have to create redundant fields for each year. For example, 2011 Budgets, 2012 Budgets, and so on. Instead, create a `Financials` object with one set of fields and a corresponding date field where you can create a new record each year. This can result in fewer fields and far better display and reporting.

Chatter

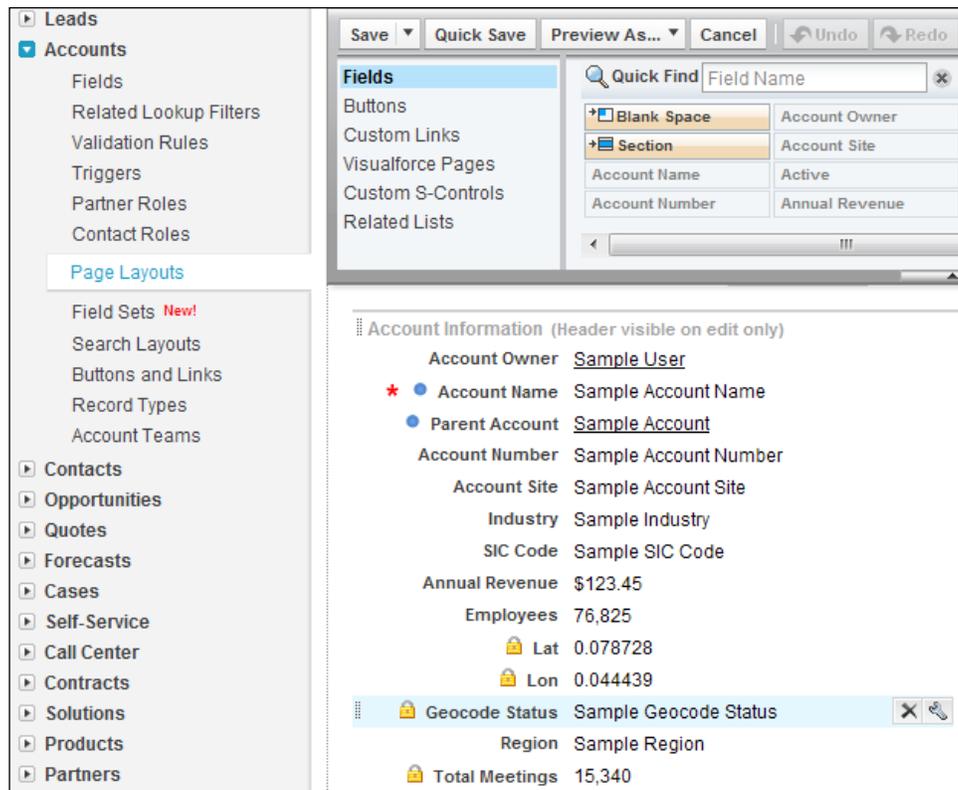
Consider the use of Chatter to eliminate unnecessary fields. Often, text-area boxes are used to track conversation flows such as support comments and internal review. These might no longer be necessary after Chatter is established. Chatter is covered later in *Chapter 7, Salesforce CRM Functions*.

Page layouts

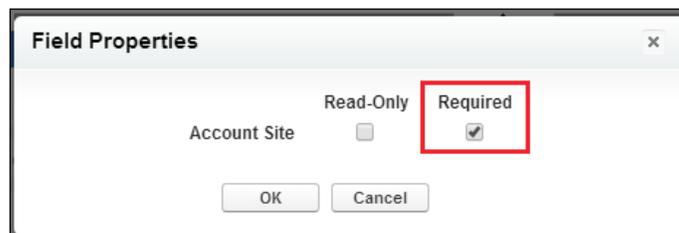
Page layouts are used to organize the display of fields, buttons, custom links, inline Visualforce pages, Report Charts, and related lists on an object detail or edit page. They are used to establish unique layouts for different business scenarios.

The displayed fields within a related list are controlled by the page layout; the name of the related list is determined by the lookup/master-detail relationship on the related object.

Page layouts are comprised of sections that contain buttons, fields, related lists, and customer links that can be edited using the enhanced page layout editor, as shown in the following screenshot. Here, we are showing how we can edit the properties of the **Account Site** field.



Within the field sections, the user interface can be used to make a field required or read-only, as shown in the following screenshot:



The enhanced page layout editor showing read-only settings, as indicated with the padlock icons, is shown in the following screenshot:

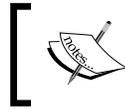
The screenshot shows the 'Account Edit' page for 'Edge Communications'. The 'Account Information' section contains the following fields: Account Owner (Paul Goodey), Account Name (Edge Communications), Parent Account (empty), Account Number (CD451796), Account Site (empty), Industry (Electronics), SIC Code (6576), Annual Revenue (139,000,000), Employees (1,000), Lat (33,112669), Lon (-96,852588), Geocode Status (G_GEO_SUCCESS), Region (A01), and SF Account Number (SFA-000017). A red bar is visible on the left side of the Account Name field, and a padlock icon is on the right side of the Parent Account field.

In the corresponding **Account Edit** page, the required field for **Account Site** is displayed with a red bar, as shown:

The screenshot shows the 'Account Edit' page for 'Edge Communications'. The 'Account Information' section contains the following fields: Account Owner (Paul Goodey), Account Name (Edge Communications), Parent Account (empty), Account Number (CD451796), Account Site (empty), Industry (Electronics), SIC Code (6576), Active (Yes), Upsell Opportunity (Maybe), Type (Customer), Rating (Hot), Phone ((512) 757-6000), Fax ((512) 757-9000), and Website (http://edgecomm.com). A red bar is visible on the left side of the Account Site field, and a red bar is also visible on the left side of the Active field. A legend indicates that a red bar means 'Required Information'.

You can combine page layouts and field-level security to create the lowest possible permission setting. For example, a hidden field (field-level permission) will never be displayed regardless of the page layout. Likewise, a field marked as **Always requires a value in this field to save a record** will always be required on the page layout.

Page layouts allow you to create and organize sections on a page and show or hide fields within sections.



Hidden fields might still be accessible elsewhere in the application. Use field-level security to restrict all possible means of accessing a field.

Creating and modifying a page layout

To create or modify a page layout, navigate to **Setup | Customize**. Select the appropriate object and click on **Page Layouts**. In the **Page Layouts** page, you can either click on the **New** button or choose the existing page layout to modify and click on **Edit**, as shown in the following screenshot:

Account Page Layout		
This page allows you to create different page layouts to display Account data. After creating page layouts, click the Page Layout Assignment button to control which page layout		
Account Page Layouts		New Page Layout Assignment
Action	Page Layout Name	Created By
Edit Del	Account (Marketing) Layout	Paul Goodev , 19/12/2009 13:01
Edit Del	Account (Sales) Layout	Paul Goodev , 19/12/2009 13:01
Edit Del	Account (Support) Layout	Paul Goodev , 19/12/2009 13:01

When clicking on the **New** button, you can optionally choose an existing layout to copy.



Creating a page layout based on an existing page layout

In the enhanced page layout editor, select an existing page layout from the list of page layouts, and then click on **Save As** to create a copy of the layout.

In the original page layout editor, select an existing page layout from the list of page layouts, and then click on the **Clone** button.

Enter a name for the new page layout and finally, click on **Save**.

You can set different page layouts for profiles and different page layouts for record types.

Record types

Record types are a feature of Salesforce CRM that allow you to provide different sets of object picklists, different page layouts, and custom business processes to specific users based on their profile. Record types can be used in various ways, for example:

- Create record types for opportunities to differentiate your internal sales deals from your field sales deals and show different fields and picklist values
- Create record types for leads to display different page layouts for your telesales leads versus your internal sales prospective functions

Creating a record type

The record type called `Master` is always set for every object and contains all the picklist and process options. It is not, however, listed under the record types list and it can be assigned a record type for a profile, provided it is only assigned as a record type for that profile.

As each record type is assigned to one page layout type per profile, the numbers of page assignments can easily increase. This means that, if you have two custom record types for an account and five profiles, you will have 15 page assignments (5*2 for each custom record type and five for the `Master` record type).

Selectable record types are assigned per profile, and field-level security is configured separately for each record type. Consider the following when creating a record type:

- Which record types are associated with the current profile?
- If more than one record type is associated with the current profile, prompt the user for record-type selection
- If only one record type is associated with the current profile, select that record type without prompting (this would be set as the default)
- Based on the record type and profile, assign the appropriate page layout
- Based on the record type, assign the appropriate process and picklist values

By associating different record types with different page layouts, fields, and picklist values, you can formulate a set of object-specific processes. In Salesforce CRM, the following are available:

- The `Lead` process using the `Lead` object, which is governed by the `Status` field (which is configured to be open, closed, and so on)
- The `Sales` process, which uses the `Opportunity` object and the `Stage` field (set to be won, lost, and so on), plus the `Amount` and `Probability` fields
- The `Support` process, which uses the `Case` object and is controlled by the `Case Status` field (this might be set to open, closed, and so on)
- The `Solutions` process, which uses the `Solution` object and the `Status` fields (set to be draft, deployed, and so on)

For example, your sales team creates an opportunity that represents a sales deal. Your sales support team then upsells this deal. You can then create two sales processes with two different record types and two different page layouts: **Sales** and **Support**.

You would want to create a lookup relationship from opportunity to opportunity and only require or display this relationship for the support team profile.

You would also be able to configure the sharing rules so that they cannot modify each other's opportunities. This is covered in detail in *Chapter 4, Data Management*.

Related lists

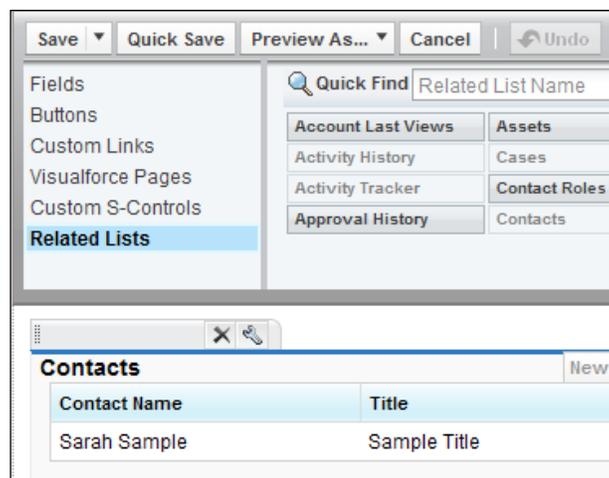
Related lists are displayed on the lower portion of the object detail page to display the related record details. Related lists show you the object records that are associated with that record.

From a related list, you can:

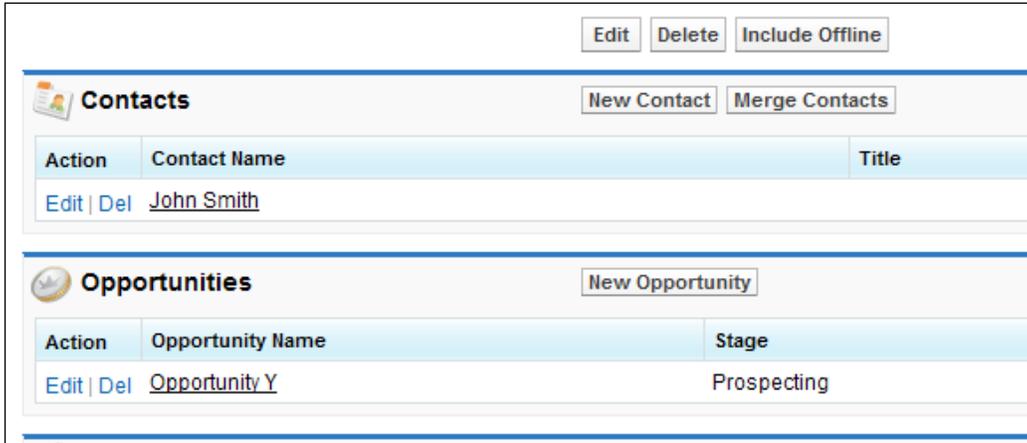
- Click on the object record name to view detailed information
- Click on **Edit** or **Del** to edit or delete the object record
- Click on **New** to create a new object record that is associated with the record you are viewing

To define whether an object can be related to another type of record, you would use either a master-detail or a lookup relationship.

Here, we show you how editing a page layout for the account object enables the arrangement and configuration of any related list:

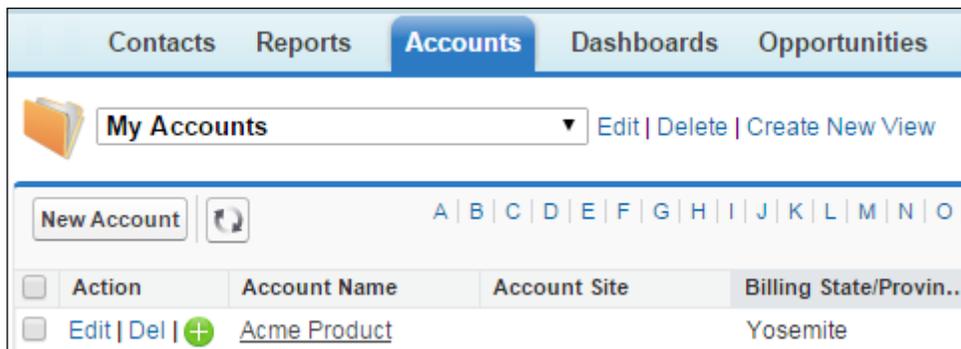


The following screenshot shows you the results of changing the related lists in the page layout editor screen when navigating to the **Account** detail page:

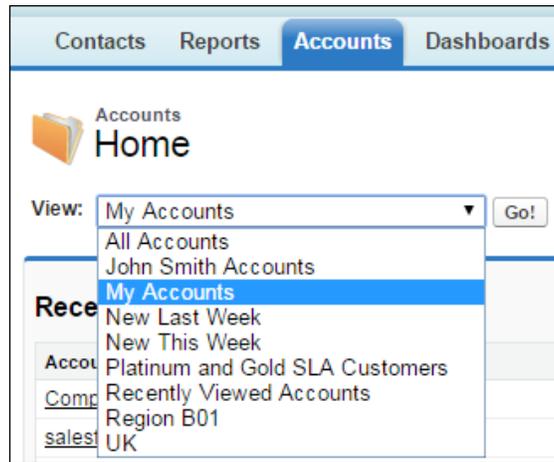


List views

When you click on a tab, the **Accounts** tab for instance, you will be shown the **My Accounts** field in that view. This is termed as a list view and can be seen as shown in the following screenshot:



Other list views can be selected from the picklist.



You can modify existing views and define which columns and buttons (including standard and custom buttons) are to be displayed. You can click on **New** to create new views.

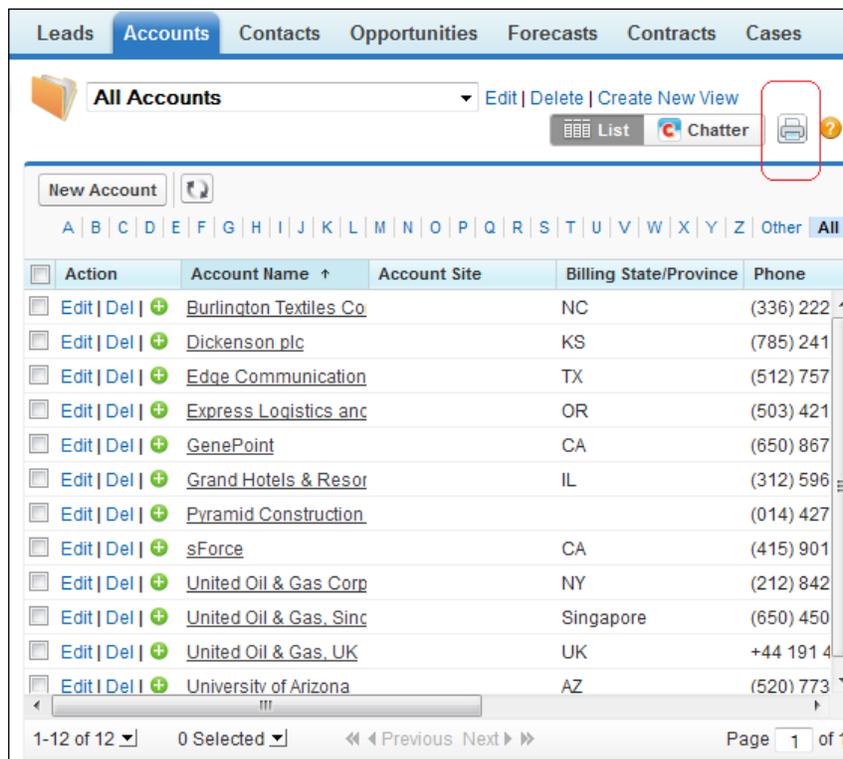
The screenshot shows the 'Create New View' form with the following sections:

- Step 1. Enter View Name:** Includes a 'View Name' text input field and a 'View Unique Name' text input field with an information icon.
- Step 2. Specify Filter Criteria:**
 - Filter By Owner:** Radio buttons for 'All Accounts' (selected) and 'My Accounts'.
 - Filter By Additional Fields (Optional):** A table with columns 'Field', 'Operator', and 'Value'. Each column has a dropdown menu currently set to '--None--'.
- Step 3. Select Fields to Display:**
 - Available Fields:** A list box containing 'Billing Street' and 'Billing City'.
 - Selected Fields:** A list box containing 'Account Name' and 'Account Site'.

Buttons for 'Save' and 'Cancel' are located at the top right of the form.

The following points apply to list views:

- Every object in Salesforce CRM that is associated with a tab automatically has at least one list view. If there is no tab set up for the object, then there will be no corresponding list view.
- List views can be modified by assigning filter criteria to control which records are returned for the affected object.
- List views can be set up to be seen and accessed only by you, or you can set them to be accessed by certain roles and groups of individuals.
- List views have a print feature that can be used by you and your users. To print from a list view, click on the **printable view** button located in the top-right corner of the page, as shown:



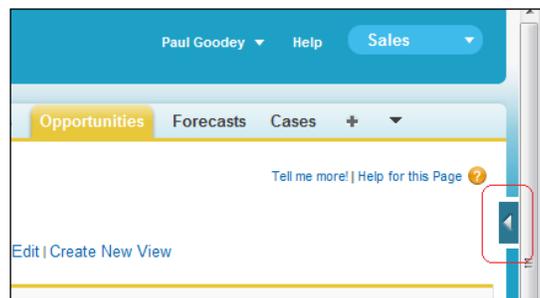
 Printable list views need to be enabled organization-wide for the print feature to be available. See user interface settings in *Chapter 1, Organization Administration*.

Force.com Quick Access menu

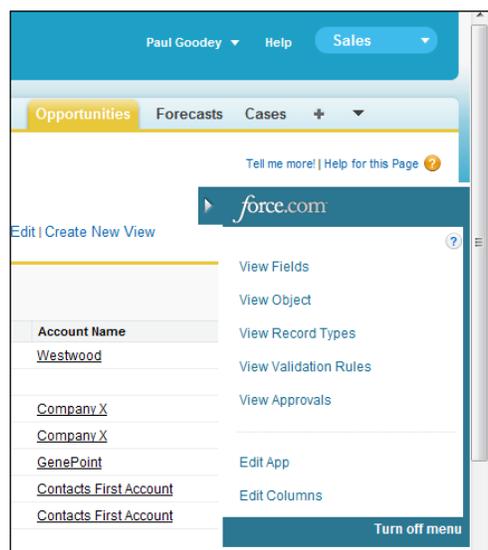
Whenever you want to view or configure object or app-related setup information, use the Force.com Quick Access menu to navigate directly to the relevant customization option.

The Force.com Quick Access menu is available from the object list view pages and record detail pages and provides shortcuts to the configuration features within Salesforce CRM.

The menu can be accessed by clicking on the arrow located on the right-hand side margin of the screen, as shown in the following screenshot:



You can then use the links to navigate directly to the desired setup page, or you can remove the menu by clicking on **Turn off menu** (this will remove the option from all list views and record pages), as shown in the following screenshot:



You can restore the menu by navigating to **Setup | My Personal Information | Personal Information**. Now, click on **Edit** on the user detail page, select **Force.com Quick Access Menu**, and then, finally, click on **Save**.

Summary

In this chapter, we described the ways in which the data structure and user-interface features can be configured within Salesforce CRM.

We looked at how object and records information can be accessed. We also looked at mechanisms for managing the methods that users use to view this information using views and page layouts.

We examined how these record structures and user interfaces are controlled by profiles and the wider picture for the way configuration of these concepts are applied for users.

We discussed some techniques to help govern the way the configuration and creation of fields can be carried out and some common pitfalls to avoid.

In the next chapter, we will look in detail at the mechanisms that control access to data records and the features that provide data management and record sharing.

4

Data Management

In the previous chapters, we looked at how Salesforce controls access to information using the user profile mechanism. We saw how the appropriate object level permissions, such as create, read, update, and delete, have to be set on the user's profile to allow the user's corresponding permissions to the records of that object type.

In this chapter, we will look at organization-wide sharing defaults, roles, and other sharing settings that complement and extend the assigning of access permissions to users within the Salesforce CRM application.

This chapter also looks in detail at some of the mechanisms to control record updates and features that are available to govern and control the quality of data entered into the application.

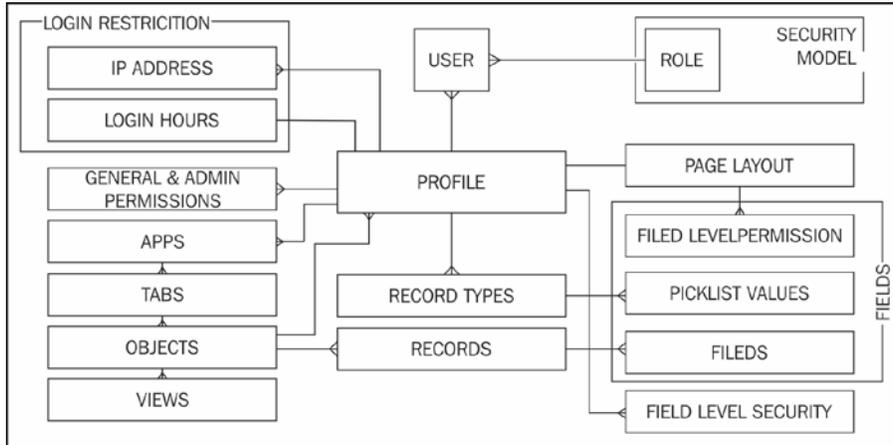
Finally, we will look at some of the data utilities that are available to import and export data to and from the system.

The data access security model

There are several flexible options that are available for you to control how records are accessed within your organization.

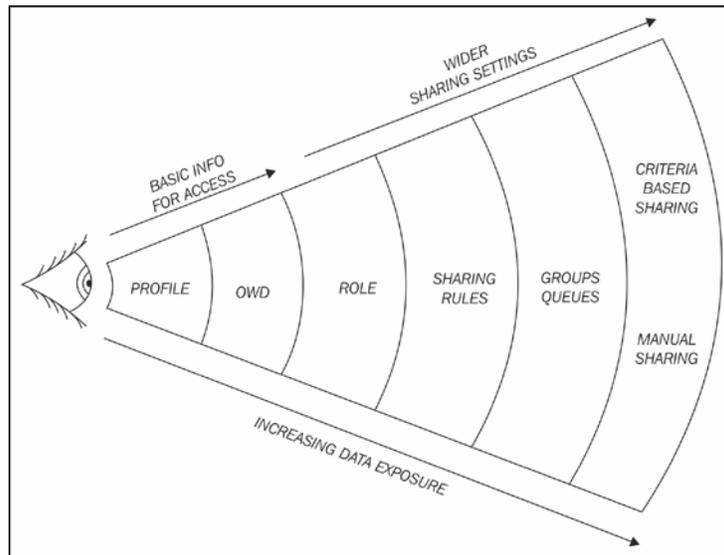
In the previous chapter, we looked at the broadest way in which you can control data by setting properties for the objects that a user can view, edit, and create through the configuration and assignment of profiles.

We also looked at the creation of fields and field-level security that is set at the profile level and is applied to records at the database level. Returning to the diagram, we will now look at the security model shown in the top-right corner of the following diagram:



To specify and set the individual records that a user can view and edit, we now look at other mechanisms that can be applied, which are setting your Organization-Wide Defaults, defining a role hierarchy, and creating sharing rules.

The following diagram shows how, with the addition of each extra feature shown, access to records is broadened:



Organization-Wide Defaults (OWDs) for sharing

Organization-Wide Defaults (OWDs) sharing settings are used to define the default sharing settings for an organization. For most objects, the sharing settings can be set to **Private**, **Public Read Only**, or **Public Read/Write**.

Organization-wide sharing default settings, often referred to in Salesforce CRM as OWDs, specify the default level of access to records and can be set separately for most of the objects in Salesforce, such as accounts, contacts, and activities.

 When setting up OWDs, you can set the access level for internal users using the **Default Internal Access** settings and set a different default access level for external users using the **Default External Access** settings.

As shown in the preceding diagram, along with the user's profile the OWD defines the baseline level of access to data records that users do not own. The diagram represents the visibility or data access that is increasing as the other features are incorporated to provide wider sharing settings.

To customize your OWD settings, navigate to **Setup | Security Controls | Sharing Settings**. Now, click on **Edit** in the organization-wide defaults area, and then select **Default Internal Access** for each object you want, as shown in the following screenshot:

Organization-Wide Sharing Defaults Edit [Help for this Page](#)

Edit your organization-wide sharing defaults below. Changing these defaults will cause all sharing rules to be recalculated. This could require significant system resources and time depending on the amount of data in your organization. Setting an object to Private makes records visible to record owners and those above them in the role hierarchy, and access can be extended using sharing rules.

Object	Default Internal Access	Default External Access	Grant Access Using Hierarchies
Lead	Private	Private	<input checked="" type="checkbox"/>
Account, Contract, Order and Asset	Private	Private	<input checked="" type="checkbox"/>
Contact	Controlled by Parent	Controlled by Parent	<input checked="" type="checkbox"/>
Opportunity	Private	Private	<input checked="" type="checkbox"/>
Case	Private	Private	<input checked="" type="checkbox"/>
Campaign	Private	Private	<input checked="" type="checkbox"/>
User	Public Read Only	Private	<input checked="" type="checkbox"/>
Activity	Private	Private	<input checked="" type="checkbox"/>
Calendar	Hide Details and Add Events	Hide Details and Add Events	<input checked="" type="checkbox"/>
Price Book	Use	Use	<input checked="" type="checkbox"/>

OWD access level actions

The OWD access levels allow the following actions to be applied to object records:

Access Level	Action
Public Full Access (Option for setting the Campaign object only)	This allows you to change the ownership of records
	This allows you to search records
	This allows you to report on records
	This allows you to add related records
	This allows you to edit details of records
Read/Write/Transfer (Option for setting the Lead and Case objects only)	This allows you to delete records
	This allows you to change the ownership of records
	This allows you to search records
	This allows you to report on records
	This allows you to add related records
Read/Write	This allows you to edit details of records
	This allows you to search records
	This allows you to report on records
	This allows you to add related records
Read Only	This allows you to edit details of records
	This allows you to search records
	This allows you to report on records
Private	This allows you to add related records
	This does not allow you to search
	This does not allow you to report

Public Full Access (Campaigns only)

Access levels for the Campaign OWDs can be set to **Private**, **Public Read Only**, **Public Read/Write**, or **Public Full Access**. When Campaign is set to **Public Full Access**, all users can view, edit, transfer, delete, and report on all Campaign records.

For example, in the scenario where John is the owner of Campaign, all other users in the application can view, edit, transfer, or delete it.

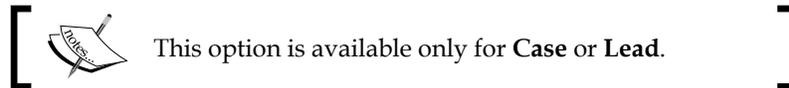


This option is available only for the Campaign object.

Public Read/Write/Transfer (Cases or Leads only)

Access levels for **Case** or **Lead** OWDs can be set to **Private**, **Public Read Only**, **Public Read/Write**, or **Public Read/Write/Transfer**. When **Case** or **Lead** are set to **Public Read/Write/Transfer**, all users can view, edit, transfer, and report on all **Case** or **Lead** records.

For example, if Lucy is the owner of WidgetX case number 101, all other users can view, edit, transfer ownership, and report on that case. However, only Lucy can delete or change the sharing on case number 101 (see the *Manual sharing rules* section later in this chapter).



Public Read/Write

All users can view, edit, and report on all records.

For example, if Mike is the owner of the **Account** record Emerald Inc., all other users can view, edit, and report on the Emerald Inc. account. However, only Mike has the ability to delete the Emerald Inc. account record or alter the sharing settings.

Public Read Only

All users can view and report on records, but they cannot edit them. Here, only the record owner and users above that user's role in the role hierarchy can edit the records.

For example, Nicole is the owner of the **Account** record EuroCorp Inc. and Nicole works in the International Sales department and reports to Julia, who is the VP of International Sales. In this scenario, both Nicole and Julia have full read/write access to EuroCorp Inc.

Now, say, Mike also works in International Sales; however, with the **Public Read Only** setting, he can view and report on the EuroCorp Inc. account record but cannot edit or delete it.

Private

Only the record owner and users above that role in the hierarchy can view, edit, and report on these records.

For example, if Mike is the owner of an **Account** record, and he is assigned to the role of International Sales and reports to Julia, who is the VP of International Sales, then Julia can also view, edit, and report on Mike's accounts.

No Access, View Only, or Use (Price Book only)

Access levels for the **Price Book** OWDs can be set to either **No Access**, **View Only**, or **Use**. **Use** is the default access level and allows all users to access the **Price Book** information as well as to use the **Price Book** configuration for opportunities with products. **View Only** allows users to access **Price Book** information but not to use that **Price Book** detail in opportunities with products. **No Access** restricts users from accessing information for **Price Books** and **Prices**.



Granting access using hierarchies

By default, Salesforce uses hierarchies, such as the role or territory hierarchy, to automatically grant record access to users above the record owner in the hierarchy.

This automatic granting of access to users' data to other users higher up in the Salesforce CRM hierarchy can be disabled for custom objects using the **Grant Access Using Hierarchies** checkbox. When this checkbox is not selected, only the record owner and users granted access by the OWD gain access to the records. For standard objects, the **Grant Access Using Hierarchies** checkbox is set by default and cannot be unchecked.

Here, we see the options available for an example custom object where, for the custom object **Country**, we have set the default access to **Public Read/Write** and the **Grant Access Using Hierarchies** setting is checked as shown in the following screenshot:

Object	Default Access	Grant Access Using Hierarchies
Lead	Public Read/Write/Transfer	<input checked="" type="checkbox"/>
Account, Contract and Asset	Public Read/Write	<input checked="" type="checkbox"/>
Contact	Controlled by Parent	<input checked="" type="checkbox"/>
Opportunity	Public Read/Write	<input checked="" type="checkbox"/>
Case	Public Read/Write/Transfer	<input checked="" type="checkbox"/>
Campaign	Public Full Access	<input checked="" type="checkbox"/>
Activity	Private	<input checked="" type="checkbox"/>
Calendar	Hide Details and Add Events	<input checked="" type="checkbox"/>
Price Book	Use	<input checked="" type="checkbox"/>
Activity Tracker Setup	Public Read/Write	<input checked="" type="checkbox"/>
Country	Public Read Only	<input checked="" type="checkbox"/>
Currency	Public Read Only	<input checked="" type="checkbox"/>
Event	Public Read/Write	<input checked="" type="checkbox"/>

Controlled by Parent

When **Controlled by Parent** is set on an object, as a result of the object being the detail side of a master-detail relationship, a user can perform an action (such as view, edit, or delete) on the record based on whether they can perform that same action on the parent record associated with it. For example, if a **Contact** record is associated with the WidgetX account using **Controlled by Parent**, then a user can only edit that contact if they can also only edit the WidgetX account record.



Tasks and Events are set to Private by default (via the Activity setting shown in the preceding screenshot). To allow users to update each other's activities (for example, to permit a user to set a task that they do not own to complete), you will need to set the Activity setting to be **Controlled by Parent** and ensure that the object that is related to the activity is also accessible to that user.

When a custom object is on the detail side of a master-detail relationship with a standard object, its OWD is automatically set to **Controlled by Parent** and it is not editable, as shown in the following screenshot for the custom object **Book**:

Object	Default Internal Access	Default External Access	Grant Access Using Hierarchies
Lead	Private	Private	✓
Account, Contract, Order and Asset	Private	Private	✓
Contact	Controlled by Parent	Controlled by Parent	✓
Opportunity	Private	Private	✓
Quote	Controlled by Parent	Controlled by Parent	✓
Case	Private	Private	✓
Campaign	Private	Private	✓
User	Public Read Only	Private	✓
Activity	Private	Private	✓
Calendar	Hide Details and Add Events	Hide Details and Add Events	✓
Price Book	Use	Use	✓
Quick Text	Public Read Only	Public Read Only	✓
Service Contract	Private	Private	✓
abc	Public Read/Write	Public Read/Write	✓
Book	Controlled by Parent	Controlled by Parent	
File Attachment	Controlled by Parent	Controlled by Parent	

Although **Grant Access Using Hierarchies** can be deselected to prevent users who are higher in the role or territory hierarchy from having automatic access, users with the **View All** and **Modify All** object and **View All Data** and **Modify All Data** profile permissions can still access records they do not own.

OWDs need to be defined separately for any custom objects that are created in the Salesforce CRM application.

For some standard objects, you cannot actually change the OWD setting.

For example, the OWD for the **Solution** object in Salesforce is preset to **Public Read/Write**, which cannot be changed.

You can use OWDs to set the default level of record access for the following standard objects where the default organization-wide sharing settings are as follows:

Object	Default Access
Accounts	Public Read/Write
Activities	Private
Assets	Public Read/Write

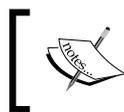
Object	Default Access
Calendar	Hide Details and Add Events
Campaigns	Public Full Access
Cases	Public Read/Write/Transfer
Contacts	Controlled by Parent
Contracts	Public Read/Write
Custom Objects	Public Read/Write
Leads	Public Read/Write/Transfer
Opportunities	Public Read Only
Price Books	Use
Service Contracts	Contracts Private
Users	Public Read Only Private for external users

External Organization-Wide Defaults (OWDs) for sharing

Organization-Wide Defaults, often referred to in Salesforce CRM as OWDs, specify the default level of access to records and can be set separately for most of the objects in Salesforce, such as accounts, contacts, and activities.

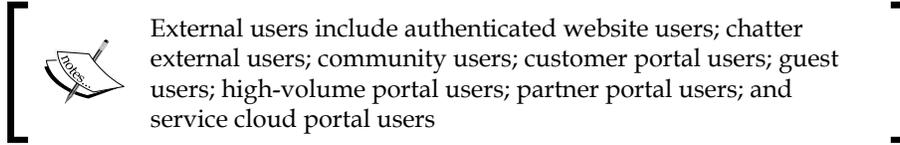
External OWDs allow you to apply a different default access level for external users, such as Chatter external users, Community users, Customer Portal users and so on.

Using External OWDs allows you to simplify the sharing model for your organization. For example, without External OWDs, if you wanted **Public Read Only** or **Public Read/Write** access for internal users but **Private** for external users, you would have to set the default access to Private and create a sharing rule to share records with all internal users. With separate OWDs, one for internal and one for external users, you can achieve similar behavior by setting the default internal access to **Public Read Only** or **Public Read/Write** and the default external access to **Private**.



External OWDs can be used to set sharing for **Accounts** (and their associated contracts and assets), **Cases**, **Contacts**, **Opportunities**, **Users**, and **Custom Objects**

Having separate OWDs, one for internal and one for external users, also speeds up the performance of reports, list views, and searches.



To activate External OWD settings, navigate to **Setup | Security Controls | Sharing Settings**. Now, click on the **Enable External Sharing Model** button, as shown in the following screenshot.

Sharing Settings [Criteria-Based Sharing Rules Video Tutorial](#) | [Help for this Page](#) ?

This page displays your organization's sharing settings. These settings specify the level of access your users have to each others' data.

Manage sharing settings for:

Enable External Sharing Model

Default Sharing Settings

Organization-Wide Defaults [Organization-Wide Defaults Help](#) ?

Object	Default Internal Access	Default External Access	Grant Access Using Hierarchies
Lead	Private	Private	✓
Account, Contract, Order and Asset	Private	Private	✓
Contact	Controlled by Parent	Controlled by Parent	✓
Opportunity	Private	Private	✓
Quote	Controlled by Parent	Controlled by Parent	✓
Case	Private	Private	✓

Effects of modifying the default access type

When you change the default access type, say, from **Private** to **Public Read/Write**, the organization record sharing for that object is recalculated and you might be presented with a warning confirmation dialog message, as shown in the following screenshot, notifying that an e-mail will be received when the OWD update finishes.

Sharing Settings

[Criteria-Based Sharing Rules Video Tutorial](#) | [Help for this Page](#) ?

This page displays your organization's sharing settings. These settings specify the level of access your users have to each others' data.

 Paul Goodey initiated a organization-wide default update on 19/07/2019 12:19. You can't submit any changes until the operation finishes. Paul Goodey will receive an email when the organization-wide default update finishes.

Manage sharing settings for:

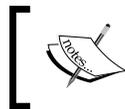
Default Sharing Settings

Organization-Wide Defaults [Organization-Wide Defaults Help](#) ?

Object	Default Access	Grant Access Using Hierarchies
Lead	Public Read/Write/Transfer	✓
Account, Contract and Asset	Public Read/Write	✓

Granting users additional access

Where the OWD setting for an object is **Private** or **Public Read Only**, you can grant users additional access to records with the use of permission sets, role hierarchies, and sharing rules.



[Sharing rules and permission sets can only be used to grant additional access and cannot be used to restrict access to records from what was originally specified with the OWD.]

Permission sets

Permission sets allow you to further control access to the system for the users in your organization. They can be considered a method to fine-tune the permissions for selected individuals and enable access in a way that's similar to the setting up of profiles.

While an individual user can have only one profile, you can assign multiple permissions and permission sets to users. For example, you can create a permission set called **Convert Leads** that, say, provides the facility for the conversion and transfer of leads using **App Permissions** and assigns it to a user who has a profile that does not provide **Lead Conversion**. You can create a permission set called **Export Reports** that, say, uses **System Permissions Export Reports** to allow specific users to export data from reports. You can also create a permission set called **Access Widget** using an **Object Settings** permission, which is associated with a custom object called **Widget** that is set in the OWDs as **Private**. Here, you can assign it to a user who has a profile that does not include the ability to access **Widgets** through their profile settings.

There is a two-step process to set up permission sets for users, and it includes:

1. Creating the permission set from the **Permission Set edit** page.
2. Assigning the user to the permission set from the **User edit** page.

Creating the permission set from the Permission Set edit page

To view and manage your organization's permission set, navigate to **Setup | Manage Users | Permission Sets**. For a new permission set, click on the **New** button and complete the **permission set information** and **Select the type of users who will use this permission set** sections. Now, edit **Object Permissions** and **Field Permissions** and choose the required object.

The following screenshot shows the creation of a permission set that allows users to use the **Access the Widgets** object (set to **Private** in the OWD access model).

Permission Set
Widget Access

Find Settings... | Clone | Edit Properties

Permission Set Overview > Object and Field Permissions | Widgets

Widgets Save Cancel

Object Permissions

Permission Name	Enabled
Read	<input checked="" type="checkbox"/>
Create	<input checked="" type="checkbox"/>
Edit	<input checked="" type="checkbox"/>
Delete	<input checked="" type="checkbox"/>
View All	<input checked="" type="checkbox"/>
Modify All	<input checked="" type="checkbox"/>

Field Permissions

Field Name	Read	Edit
Account	<input type="checkbox"/>	<input type="checkbox"/>
Name	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Created By	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Last Modified By	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Owner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Assigning the user to the permission set from the User edit page

To view and manage which of your users are assigned to permission sets, navigate to **Setup | Manage Users | Users**. Now, choose a user by clicking on their username. Click on **Permission Set Assignments**, and then click on **Edit Assignment** to view and choose from the list of available permissions. The following screenshot shows you the resulting section:

User
Sales Person Edit Layout | Help for this Page

Permission Set Assignments [1] | Personal Groups [0] | Public Group Membership [0] | Queue Membership [0]

Permission Set Assignments Edit Assignments Permission Set Assignments Help

Action	Permission Set Label	Date Assigned
Del	Widget Access	25/09/2011



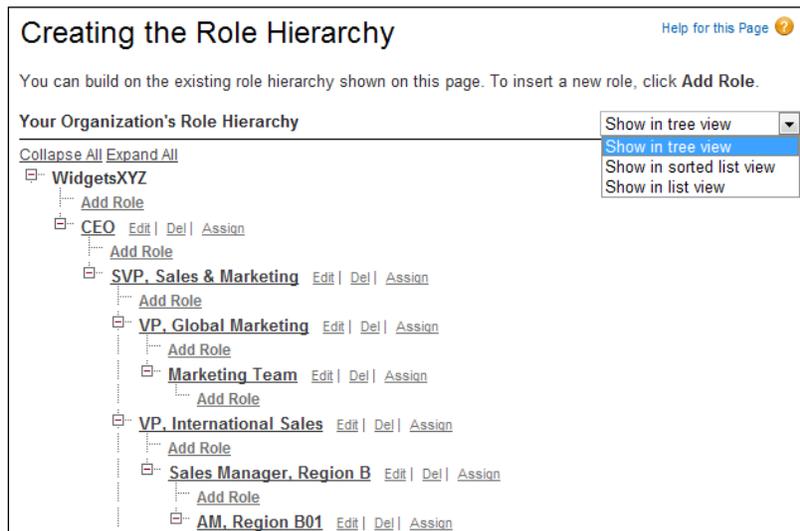
You can create up to 1,000 permission sets for your organization.

You can group multiple permissions into a permission set to create specific profile-like permissions without actually having to create or clone complete profiles that are often unnecessary and time consuming.

Role hierarchy

Once the OWDs have been established, you can use a role hierarchy to ensure that managers can view and edit the same records as their line reports (or subordinates). Users at any given role level are always able to view, edit, and report on all data owned by or shared with users below them in the hierarchy unless the OWD settings specify that you can ignore the hierarchies.

To view and manage your organization's role hierarchy, navigate to **Setup | Manage Users | Roles**, as shown in the following screenshot:



Here, you can choose to view the hierarchy in one of the following options.

The show in tree view option

The **Show in tree view** option displays a visual representation of the parent-child relationships between your roles. Click on **Expand All** to see all roles or on **Collapse All** to see only top-level roles. To expand or collapse an individual role node, you can click on the plus [+]
or minus [-] icon, as shown in the preceding screenshot.

The show in sorted list view option

The **Show in sorted list view** option displays the roles as a list that you can sort alphabetically by role name, parent role (**Reports to**), or **Report Display Name**. If your organization has a large number of roles, this view provides a far easier way to navigate the hierarchy, as shown in the following screenshot:

The screenshot shows the 'Roles' page with a 'View' dropdown menu open. The 'Show in sorted list view' option is selected. Below the menu is a table of roles with columns for Action, Role, Reports to, and Report Display Name.

Action	Role ↑	Reports to	Report Display Name
Edit Del Assign	AM_Region A01	Sales Manager, Region A	AM, Region A01
Edit Del Assign	AM_Region B01	Sales Manager, Region B	AM, Region B01
Edit Del Assign	CEO		CEO
Edit Del Assign	Marketing Team	VP, Global Marketing	Marketing Team
Edit Del Assign	Sales Manager, Region A	VP, North American Sales	Sales Manager, Region A
Edit Del Assign	Sales Manager, Region B	VP, International Sales	Sales Manager, Region B
Edit Del Assign	SVP, Sales & Marketing	CEO	SVP, Sales & Marketing
Edit Del Assign	VP, Global Marketing	SVP, Sales & Marketing	VP, Global Marketing

To show a filtered list of roles, select a predefined list from the **View** drop-down list, or click on **Create New View** to define your own custom view of roles. To edit or delete any view you have created, select it from the **View** drop-down list and click on the **Edit** link. Once you're on the **Edit View** page, you can click on the **Delete** button to delete the list view.

The show in list view option

The **Show in list view** option displays the roles as an indented list of roles and their child nodes, grouped alphabetically by the name of the top-level role as follows:

The screenshot shows the 'Roles' page with a 'View' dropdown menu open. The 'Show in list view' option is selected. Below the menu is a table of roles with columns for Action, Role, Reports To, and Report Display Name.

Action	Role	Reports To	Report Display Name
Edit Del Assign	CEO		CEO
Edit Del Assign	SVP, Sales & Marketing	CEO	SVP, Sales & Marketing
Edit Del Assign	VP, Global Marketing	SVP, Sales & Marketing	VP, Global Marketing
Edit Del Assign	Marketing Team	VP, Global Marketing	Marketing Team
Edit Del Assign	VP, International Sales	SVP, Sales & Marketing	VP, International Sales
Edit Del Assign	Sales Manager, Region B	VP, International Sales	Sales Manager, Region B
Edit Del Assign	AM_Region B01	Sales Manager, Region B	AM, Region B01
Edit Del Assign	VP, North American Sales	SVP, Sales & Marketing	VP, North American Sales

 The columns are not sortable.

To create a role, click on **New Role** or **Add Role**, depending on whether your view of roles is using the list view or tree view, and enter the role fields as required.

 You can create up to 500 roles for your organization.

To edit a role, click on **Edit** next to a role name, and then update the role fields as required. You can delete a role by clicking on **Del** next to the role name.

To assign other users to a role, click on **Assign** next to the role name and to view detailed information about a role, click on the role name.

 If your organization uses territory management, forecasts are based on the territory hierarchy instead of the role hierarchy.

Role hierarchies do not need to represent your company's organization chart; instead, each role in the hierarchy should be considered as a level of data access that your users or groups in Salesforce require.

Depending on your sharing settings, roles can control the level of visibility that users have into your organization's data. Users at a particular role level can view, edit, and report on all data that is owned by, or has been shared with, users below them in the hierarchy. This is assuming your organization's sharing mechanism for that object type does not specify otherwise.

Specifically, in the OWDs related list, if the **Grant Access Using Hierarchies** option is disabled for, say, a custom object, only then can the record owner and users who are granted access by the OWDs access that custom object's records.

Although it is possible to create a user record without a role, users would need to be assigned to a role so that their records will appear in opportunity reports, forecast roll-ups, and any other displays based on roles.

 When an account owner is not assigned a role, the sharing access for related contacts is **Read/Write**, provided the OWD for contacts is not **Controlled by Parent**. Sharing access on related opportunities and cases is **No Access**.

Users who are to have access to all records in Salesforce CRM should be set at the top-most position of the role hierarchy.

When you change a user's role, any relevant sharing rules are reevaluated to add or remove access to records as required.



It is not necessary to create individual roles for each and every job title within your company. Instead, aim to define a hierarchy of roles that will help control the access of information entered by users in lower-level roles.

To view detailed information about a role, navigate to **Setup | Manage Users | Roles**. Clicking on the role name will present the role details page, as shown in the following screenshot:

The screenshot shows the 'Role Detail' page for 'VP, International Sales'. It includes a 'Role Detail' section with 'Edit' and 'Delete' buttons, a 'Users in VP, International Sales Role' list with one user (Trevor Howard), and a 'Users in VP, International Sales Role' section with 'Assign Users to Role' and 'New User' buttons. The user list table is as follows:

Action	Full Name	Alias	Username	Last Login	Active
Edit	Trevor Howard	thow	trevor.howard@widgetxyz.com	31/01/2011 02:45	✓

To view the **Role Detail** page for a parent or sibling role, click on the role name in the hierarchy or siblings list.

To edit the role details, click on **Edit**.

To remove the role from the hierarchy, click on **Delete**.

Within the **Users**, in **Role** related list, you have the following options:

- Assign a user to the role by clicking on **Assign Users to Role**
- Add a user to your organization by clicking on **New User**

- Modify the user information by clicking on **Edit** next to a user's name
- View a user's details by clicking on the user's **Full Name, Alias, or Username**



When you edit roles, sharing rules are usually automatically reevaluated to add or remove access to records as required. If these changes result in too many records changing at once, a message appears, warning that the sharing rules will not be automatically reevaluated and that you have to manually recalculate them (as shown further). Sharing rules should be used when a user or group of users needs access to records not already granted to it with either the role hierarchy setup or the OWD settings.

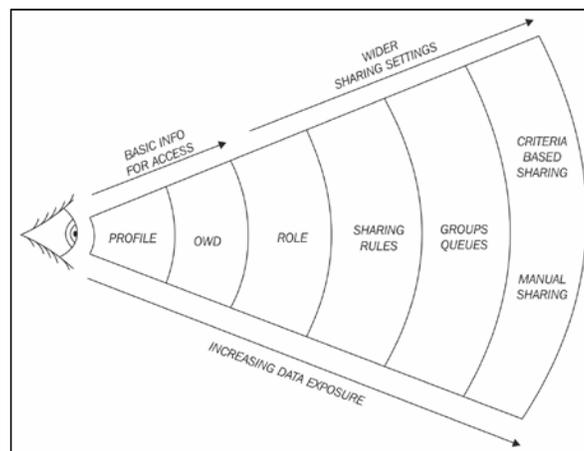
When you modify users in a role, any sharing rules are also reevaluated to add or remove access as required.

Organization-Wide Defaults and sharing rules

A user's level of access to records will never be more restrictive with the use of sharing rules than the options chosen in the OWDs. The OWDs are a minimum level of access for all users.

Sharing rules

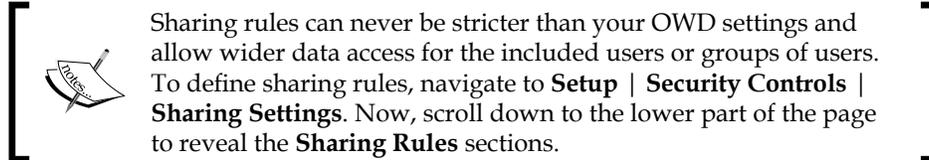
With sharing rules, you are, in effect, setting automatic extensions to your organization-wide sharing settings for particular sets of users. As shown in the following screenshot, this can be considered to open up visibility and access to records for these users:



Sharing rules apply to:

- All new and existing records owned by the specified role or group members
- Both active and inactive users

Sharing rules extend the access specified by OWDs and the role hierarchy.



The following screenshot shows you the **Sharing Rules** page where there are sections to set the sharing rules for the various standard objects within the application, such as **Lead**, **Account**, and **Contact**, as well as any custom objects in your organization:

Sharing Rules					
Lead Sharing Rules New Recalculate Lead Sharing Rules Help ?					
No sharing rules specified.					
Account Sharing Rules New Recalculate Account Sharing Rules Help ?					
Action	Criteria	Shared With	Account, Contract and Asset	Opportunity	Case
Edit Del	Account: Market EQUALS US	Role: VP, North American Sales	Read Only	Read Only	Read Only
Edit Del	Owner in All Internal Users	Role and Subordinates: VP, Global Marketing	Read Only	Read Only	Read/Write
Contact Sharing Rules New Recalculate Contact Sharing Rules Help ?					
No sharing rules specified.					
Opportunity Sharing Rules New Recalculate Opportunity Sharing Rules Help ?					
Action	Criteria	Shared With	Opportunity		
Edit Del	Owner in Role and Subordinates: Sales Manager, Region A	Role: Sales Manager, Region B	Read Only		
Edit Del	Owner in Role and Subordinates: Sales Manager, Region B	Role: Sales Manager, Region A	Read Only		
Case Sharing Rules New Recalculate Case Sharing Rules Help ?					

Within the **Sharing Rules** setup section, the following object sharing rules can be applied.

Account sharing rules

Account sharing rules are based on the account owner or other criteria, including account record types or field values, and set the default sharing access for accounts and their associated **Contract**, **Asset**, **Opportunity**, **Case**, and (optionally) **Contact** records.

Account territory sharing rules

Account territory sharing rules are based on territory assignment and set the default sharing access for accounts and their associated **Case**, **Contact**, **Contract**, and **Opportunity** records.

Campaign sharing rules

Campaign sharing rules are based on **Campaign** owner and set the default sharing access for the individual **Campaign** records.

Case sharing rules

Case sharing rules are based on the **Case** owner or other criteria, including case record types or field values, and set the default sharing access for the individual case and associated account records.

Contact sharing rules

Contact sharing rules are based on the **Contact** owner or other criteria, including contact record types or field values, and set the default sharing access for the individual contacts and associated account records.

Lead sharing rules

Lead sharing rules are based on the **Lead** owner and set the default sharing access for the individual lead records.

Opportunity sharing rules

Opportunity sharing rules are based on the **Opportunity** owner or other criteria, including opportunity record types or field values, and set the default sharing access for the individual opportunity and their associated account records.

User sharing rules

User sharing rules are based on group membership (described later in this chapter) or other criteria and set the default sharing access for the individual user records.

Custom object sharing rules

Custom object sharing rules are based on the custom object record owner or other criteria, including custom object record types or field values, and set default sharing access for individual custom object records.

Groups

Groups allow you to simplify the setting up of OWD sharing access via a sharing rule for sets of users or for individual users to selectively share their records with other users.

Public groups

Public groups are sets of users that only administrators are permitted to create and edit. However, when created, public groups can be used by everyone in the organization.

Public groups can contain individual users, users in a particular role or territory, users in a specified role along with all the users below that role in the role hierarchy, or other public groups.

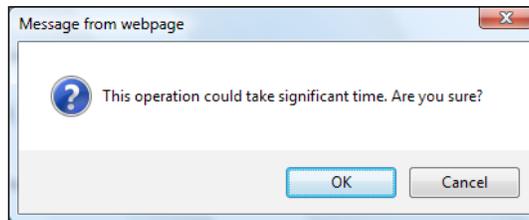
Personal groups

Personal groups are sets of users that everyone can create and edit for their personal use.

Personal groups can contain individual users, public groups, the users in a particular role or territory, or the users in a particular role along with all the users below that role or in the hierarchy.

Effects of adding or modifying sharing rules

When you add a new sharing rule, the access levels for the sharing rule are calculated, and you are provided with a warning confirmation dialog message, as shown in the following screenshot, indicating that this operation could take a significant time:



Changing or deleting sharing rules as well as the transferring of records between users causes reevaluation of appropriate record access for the impacted users.



If these changes affect too many records at once, a message appears, warning you that the sharing rules will not be automatically reevaluated and you must manually recalculate them.

The following list outlines what changes can be done to **Sharing Rules** and the consequence of applying these changes:

- When you change the access levels for a sharing rule, all existing records are automatically updated to reflect the new access levels
- When you delete a sharing rule, the sharing access created by that rule is automatically removed
- When you transfer records from one user to another, the sharing rules are reevaluated to add or remove access to the transferred records as required
- When you modify which users are in a group or role, any sharing rules are reevaluated to add or remove access to these users as required

- Users who are higher in the role hierarchy are automatically granted the same access that users below them in the hierarchy have from a sharing rule



When you edit groups, roles, and territories, sharing rules are usually automatically reevaluated to add or remove access as required. Manually recalculating sharing rules can be performed at any time.

To manually recalculate sharing rules, navigate to **Setup | Security Controls | Sharing Settings**. Now, scroll down to the lower part of the page to reveal the **Sharing Rules** sections and in the **Sharing Rules** related list for the object you want, click on **Recalculate**, as shown in the following screenshot:

Sharing Rules

Lead Sharing Rules [Lead Sharing Rules Help ?](#)

No sharing rules specified.

Account Sharing Rules [Account Sharing Rules Help ?](#)

Action	Criteria	Shared With	Account, Contract and Asset	Opportunity	Case
Edit Del	Account: Market EQUALS US	Role: VP, North American Sales	Read Only	Read Only	Read Only
Edit Del	Owner in All Internal Users	Role and Subordinates: VP, Global Marketing	Read Only	Read Only	Read/Write

Contact Sharing Rules [Contact Sharing Rules Help ?](#)

No sharing rules specified.

Opportunity Sharing Rules [Opportunity Sharing Rules Help ?](#)

Action	Criteria	Shared With	Opportunity
Edit Del	Owner in Role and Subordinates: Sales Manager, Region A	Role: Sales Manager, Region B	Read Only
Edit Del	Owner in Role and Subordinates: Sales Manager, Region B	Role: Sales Manager, Region A	Read Only

Case Sharing Rules [Case Sharing Rules Help ?](#)

Criteria-based sharing rules

Criteria-based sharing rules are used to control which users have access to records based on specified field values on the records. For example, the account object has a custom picklist field named **Market**. You can create a criteria-based sharing rule that shares all accounts in which the **Market** field is set to **US** with, say, a **North American Sales** team in your organization, as shown in the following screenshot:

Setup Help for this Page

Account Sharing Rule

Use sharing rules to make automatic exceptions to your organization-wide sharing settings for defined sets of users.

Note: "Roles and subordinates" includes all users in a role, and the roles below that role. This includes portal roles that may give access to users outside the organization.

You can use sharing rules only to grant wider access to data, not to restrict access.

Criteria	Field	Operator	Value	
	Market	equals	US	AND
	--None--	--None--		AND
	--None--	--None--		AND
	--None--	--None--		AND
	--None--	--None--		AND

[Add Filter Logic](#)

Share with: Role: VP, North American Sales

Default Account, Contract and Asset Access: Read Only

Opportunity Access: Read Only Modified By: Paul Goodey, 28/03/2011 04:41

Case Access: Read Only

Created By: Paul Goodey, 06/03/2011 22:48

Although criteria-based sharing rules are based on values in the records and not the record owners, a role or territory hierarchy still allows users higher in the hierarchy to access the records.

You can create criteria-based sharing rules for **Account**, **Opportunity**, **Case**, **Contact**, and **Custom object**.

For example, a custom object has been created for **Newsletter**. You can create a criteria-based sharing rule that shares all newsletters in which the name is set to **International** with the **International Sales** team in your organization, as follows:

Setup [Help for this Page](#) 

Newsletter Sharing Rule

Use sharing rules to make automatic exceptions to your organization-wide sharing settings for defined sets of users.

Note: "Roles and subordinates" includes all users in a role, and the roles below that role. This includes portal roles that may give access to users outside the organization.

You can use sharing rules only to grant wider access to data, not to restrict access.

Label	International in Name		
Rule Name	International_in_Name 		
Criteria	Field	Operator	Value
	Newsletter Name	contains	International,international
	--None--	--None--	

[Add Filter Logic...](#)

Share with: Role, Internal and Portal Subordinates: VP, International Sales

Access Level: Read Only

Created By: [Paul Goodey](#), 28/03/2011 05:23 Modified By: [Paul Goodey](#), 28/03/2011 05:23

Text and text area fields must be exactly specified, as they are case-sensitive. For example, a criteria-based sharing rule that specifies **International** in a text field would not share records with "international" in the field.



Criteria-based sharing rule with text fields

To create a criteria-based sharing rule that matches several cases of a word, enter each value separated by a comma, for example, International, international and use the `contains` operator.

There is a restriction on the type of field that can be used for sharing as part of the Criteria-based sharing. Along with record types, this list of fields can be set as criteria for sharing: **Auto Number, Checkbox, Date, Date/Time, E-mail, Number, Percent, Phone, Picklist, Text, Text Area, URL, and Lookup Relationship** (to either **User** or **Queue**).



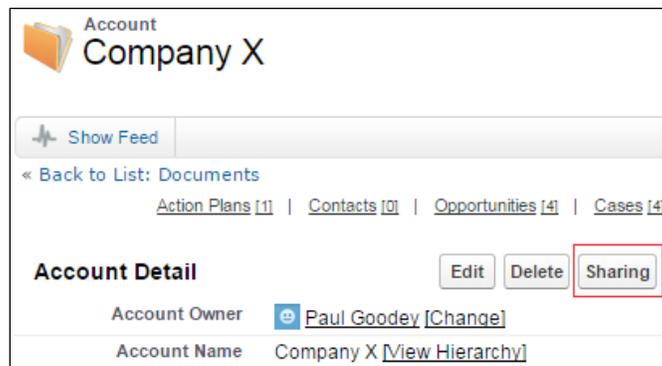
Up to 50 criteria-based sharing rules can be created per object.

Manual sharing rules

Users can manually share certain types of records with other users within the Salesforce CRM application. Some objects that are shared automatically include access to all other associated records. For example, if a user shares one of their account records, then the granted user will also have access to all the opportunities and cases connected to that account.

Manual sharing rules are generally used either on a one-off basis to share a record or whenever there is a difficulty trying to determine a consistent set of users, groups, and the associated rules that would be involved as a part of an organization-wide sharing setting. To be able to grant sharing access to a record, the user must either be the record owner, a system administrator, a user in a role above the owner in the hierarchy, or any user who has been granted full access; alternatively the OWD settings for that object must be allowed access through hierarchies.

Users grant access simply by clicking on the **Sharing** button found on the **Record Detail** page, as shown in the following screenshot:



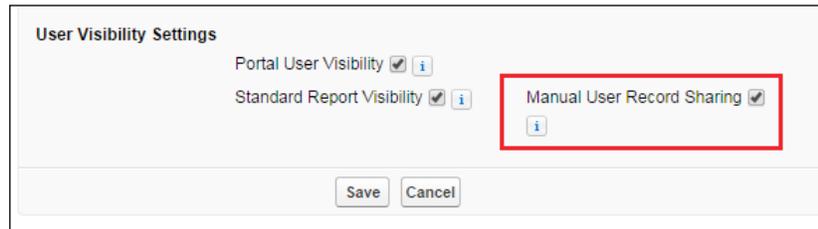
[ The **Sharing** button does not appear if the object's OWDs are set to **Public Read/Write**.]

Manual sharing for user records

You can specify whether the **Sharing** button, used to grant others access to the user's own user record, is displayed on user detail pages.

To hide or display the user sharing button for all users, navigate to **Setup | Security Controls | Sharing Settings**. Now, click on **Edit** in the **Organization-Wide Defaults** area and scroll to the bottom of the page.

To hide or display the sharing button on user detail pages, select the **Manual User Record Sharing** checkbox, as shown in the following screenshot, and then click on **Save**.



Queues

Queues allow groups of users to manage shared records.

A queue is a location where records can be routed to await processing by a group member. The records remain in the queue until a user accepts them for processing or they are transferred to another queue.

When creating a new queue, you must specify the set of objects that are stored. Permitted objects for queues are leads, cases, service contracts, and custom objects. You must also specify the set of users that are allowed to retrieve records from the queue.

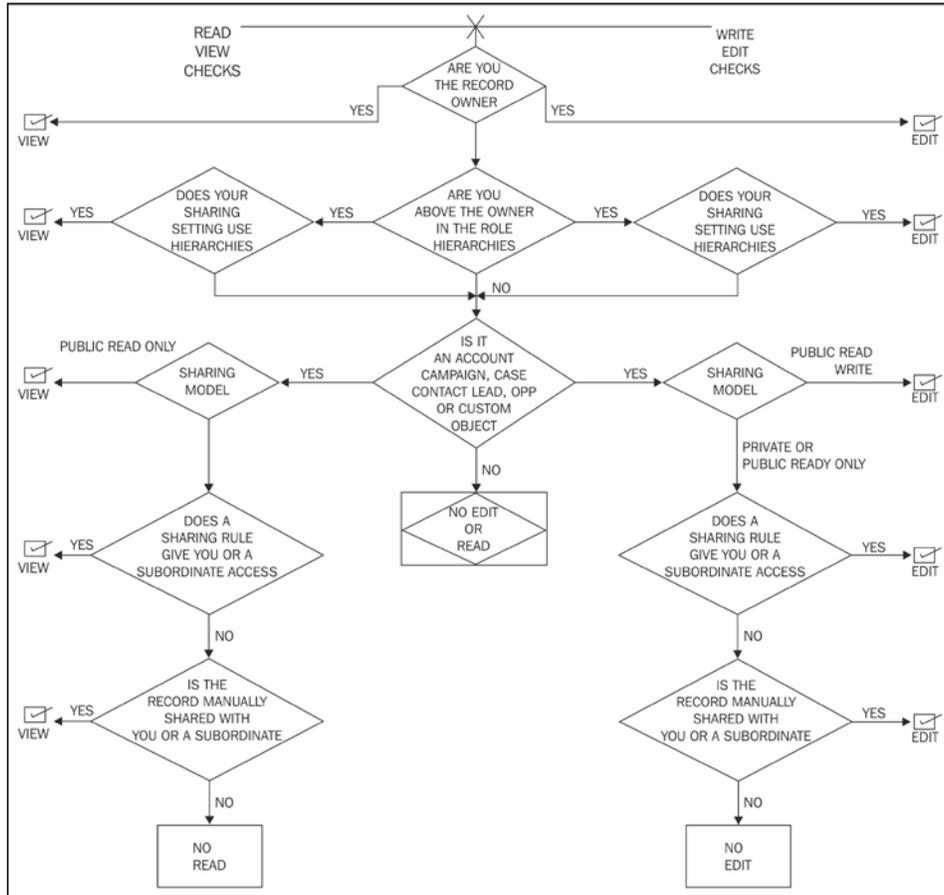
Records can be added to a queue either manually or through an automatic case or lead assignment rules.

Once records are added to a queue, they remain there until they are either assigned to a user or retrieved by one of the queue members. Here, any queue member or any user located above a queue member in the role hierarchy can take ownership of records in a queue.

Sharing access diagram

Many security options work together to determine whether users can view or edit a record. First, Salesforce checks whether the user's profile has object-level permission to access that object. Then, Salesforce checks whether the user's profile has any administrative permissions, such as **View All Data** or **Modify All Data**. Finally, Salesforce will check the ownership of the record. Here, the OWDs, role-level access, and any sharing rules will be checked to see whether there are any rules that give the user access to that record.

The following flow diagram shows you how users are affected by the different security options associated with record ownership and sharing models and rules that can be set:



In addition to the check to determine whether a user can *view* a record, shown in the previous screenshot, their profile (or permission set) must be set with the *view* permission for the relevant object.

In addition to the check to determine whether a user can *edit* a record, shown in the previous screenshot, their profile (or permission set) must be set with the *edit* permission for the relevant object.

Data validation

In the previous chapter, we looked at how we can set the required field and auto number field properties on custom fields to help improve the quality and maintain the data integrity of records in the system.

Salesforce also provides other data validation mechanisms, such as the following:

- Data validation rules
- Dependent picklists

Data validation rules

Data validation rules can be applied to both custom and standard fields and are used to verify that the data entered in a record meets the criteria you have specified before the record can be saved.

Validation rules contain a formula or expression that evaluates the data in one or more fields and returns a value of either `true` or `false`.

The logic that is used for validation rules is to seek an error condition, upon which a preconfigured error message is shown to the user whenever the formula or expression returns a value of `true`.

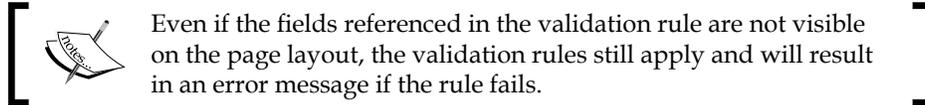
When validation rules are defined for a field or set of fields, the following actions are fired when the user creates a new record or edits an existing record and then clicks on the **Save** button:

1. Salesforce executes the validation rules, and only if all data is valid is the record then saved.
2. For any invalid data, Salesforce displays the associated error message without saving the record.

You can specify the error message to be displayed when a validation rule gets fired with the option to show the error message inline next to a field firing the validation rule. You can also specify where to display it. For example, your error message can be **The close date must occur after today's date**. You can choose to display it near a field or at the top of the page. Like all other Salesforce error messages, validation rule errors are displayed in red text and are preceded by the word **Error**.

Validation rules apply to all new and updated records for an object.

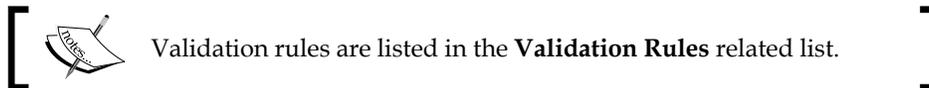
If your organization has multiple page layouts for the object on which you create a validation rule, you should verify that the validation rule operates as expected on each layout. Also, if you have any data integrations that affect the object, then you should also verify that the validation rule operates as intended.



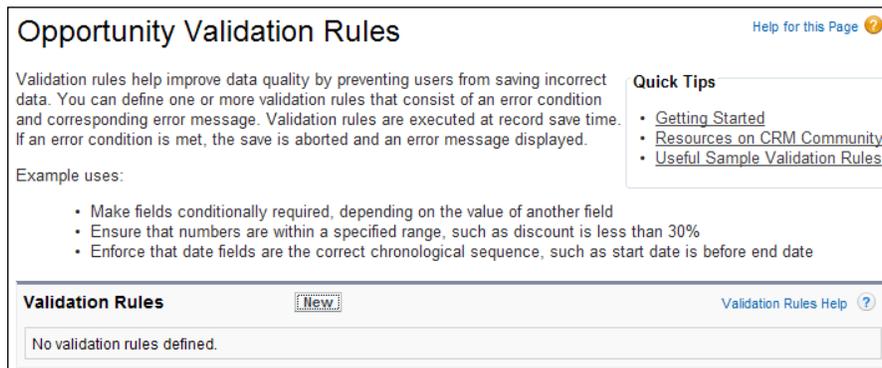
To begin using validation rules, navigate to **Setup | Customize**.

For standard objects, go to the appropriate activity, standard object, or the user's link from the menu, and click on **Validation Rules**.

For custom objects, navigate to **Setup | Create | Objects**. Now, go to the custom object.



As shown, to begin adding a new validation rule, click on the **New** button in the **Validation Rules** section, as shown in the following screenshot:



Now, enter the properties of your validation rule that should include the properties detailed in the upcoming sections.

The field description section

Add a **Rule Name**, which is a unique identifier of up to 80 characters with no spaces or special characters such as extended characters.

The **Active** checkbox that is used to set that the rule is enabled.

Fill in the **Description** field, which is an optional 255 character or less textbox that you can set to describe the purpose of the validation rule.

The Error Condition Formula section

The formula that is entered here forms the expression that is used to validate the field.

The Error Message section

The **Error Message** field is the text to be displayed to the user when a record update fails the validation rule.

Error Location is used to determine where on the page the error is displayed to the user. The options that are available are:

- **Top of Page**
- **Field**

The **Top of Page** option sets the error message to be displayed at the top of the page. To display the error next to a field, choose the **Field** option and then select the appropriate field.

If the error location is a field, the validation rule is also listed on the **Detail** page of that field.

You can click on **Check Syntax** to check your formula for errors and finally, click on **Save** to finish or **Save & New** to create additional validation rules.

As an example, the following formula text shows you an opportunity validation rule to ensure that users cannot enter a date in the past into the **Close Date** field.

The formula would be `CloseDate < TODAY()`



If the error location is set to a field that is later deleted or a field that is read-only or not visible on the page layout, Salesforce automatically changes the error location to **Top of Page**.

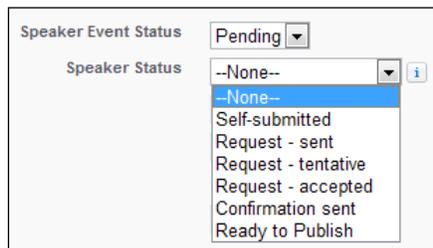
An example error message for this validation rule is **Close Date Must Be a Future Date**.

Dependent picklists

Dependent picklists help make data more accurate and consistent by applying filters.

A dependent field works in conjunction with a controlling field to filter its values. The value chosen in the controlling field affects the values in the dependent field.

In the following screenshot, we see the **Speaker Status** field being controlled by the **Speaker Event Status** field:



Dependent and controlling picklists

Dependent and controlling picklists work in conjunction where the value chosen in the controlling picklist dynamically changes the values that are available in the dependent picklist.

Both controlling and dependent picklists are indicated on the edit pages by an icon. By hovering the mouse over these icons, users can see the name of the controlling or dependent picklist.

To define a dependent picklist, navigate to the field's area of the appropriate object.

For standard objects, navigate to **Setup | Customize**. Now, select the appropriate object from the **Customize** menu and click on **Fields**.

For custom objects, navigate to **Setup | Create | Objects**. Now, select one of the custom objects in the list.

For custom task and event fields, navigate to **Setup | Customize | Activities | Activity Custom Fields**.

Now, click on **Field Dependencies** in the **Custom Fields & Relationships** section, as shown in the following screenshot:

Custom Object
Speaker

[Standard Fields \[4\]](#) | [Custom Fields & Relationships \[21\]](#) | [Validation Rules \[0\]](#) | [Page Layouts \[1\]](#)
[Search Layouts \[7\]](#) | [Buttons, Links, and Actions \[8\]](#) | [Record Types \[0\]](#) | [Apex Sharing Reasons \[0\]](#) |

Custom Object Definition [Edit](#) [Delete](#) [Truncate](#)

Detail

Singular Label	Speaker	Description
Plural Label	Speakers	Enable Reports
Object Name	Speaker	Track Activities
API Name	Speaker__c	Allow Sharing
Created By	Paul Goodey, 27/11/2010 18:44	Modified By

Standard Fields

Action	Field Label	Field Name	Data Type
	Created By	CreatedBy	Lookup(User)
	Last Modified By	LastModifiedBy	Lookup(User)
Edit	Owner	Owner	Lookup(User,Queue)
Edit	Speaker Name	Name	Auto Number

Custom Fields & Relationships [New](#) [Field Dependencies](#) [Set History Tracking](#)

Action	Field Label	API Name	Data Type
--------	-------------	----------	-----------

Now, click on **New** to navigate to the **New Field Dependency** screen and then choose **Controlling Field** and **Dependent Field**, as shown in the following screenshot:

New Field Dependency [Help for this Page](#)

Create a dependent relationship that causes the values in a picklist or multi-select picklist to be dynamically filtered based on the value selected by the user in another field.

- The field that drives filtering is called the "controlling field." Standard and custom checkboxes and picklists with at least one and less than 300 values can be controlling fields.
- The field that has its values filtered is called the "dependent field." Custom picklists and multi-select picklists can be dependent fields.

Step 1. Select a controlling field and a dependent field. Click Continue when finished.

Step 2. On the following page, edit the filter rules that control the values that appear in the dependent field for each value in the controlling field.

[Continue](#) [Cancel](#)

Controlling Field **Speaker Event Status** ▼

Dependent Field **Speaker Status** ▼

[Continue](#) [Cancel](#)

Click on **Continue** to display the next screen where you are presented with a field dependency matrix to specify the dependent picklist values that are available when a user selects each controlling field value.

The field dependency matrix lets you specify the dependent picklist values that are available when a user selects each controlling field value. The top row of the matrix shows you the controlling field values while the columns show you the dependent field values.

Using this matrix, you can include or exclude values. Included values are available in the dependent picklist when a value in the controlling field is selected and excluded fields are not available.

Here, you can include or exclude values by performing the following steps:

1. Double-click on values to include them. The included values are then indicated with a highlight. (Double-clicking again on any highlighted values will exclude them).
2. To work with more than one value, you should use the *Shift* key and click on each value to select the required range of values, as shown in the following screenshot:

The screenshot shows the 'Edit Field Dependency' interface. At the top, there are 'Save', 'Cancel', and 'Preview' buttons. Below this, the 'Controlling Field' is 'Speaker Event Status' and the 'Dependent Field' is 'Speaker Status'. An 'Instructions' section contains the text: 'Click button to include or exclude selected values from the dependent picklist.' Below the instructions are 'Include Values' and 'Exclude Values' buttons. The main part of the interface is a table with the following structure:

Speaker Event Status:	New	Pending	Closed
Speaker Status:	Nominated	Nominated	Nominated
	Self-submitted	Self-submitted	Self-submitted
	Not a good fit	Not a good fit	Not a good fit
	Request - sent	Request - sent	Request - sent
	Request - tentative	Request - tentative	Request - tentative
	Request - accepted	Request - accepted	Request - accepted
	Request - declined	Request - declined	Request - declined
	Speaker Approved	Speaker Approved	Speaker Approved
	Confirmation sent	Confirmation sent	Confirmation sent
	No comp pass	No comp pass	No comp pass
	Canceled	Canceled	Canceled
	Duplicate	Duplicate	Duplicate
	Ready to Publish	Ready to Publish	Ready to Publish

At the bottom of the table, there are 'Include Values' and 'Exclude Values' buttons, and 'Save', 'Cancel', and 'Preview' buttons.

- After selecting the values, click on **Include Values** to make the values available, or click on **Exclude Values** to remove them from the list of available values.

You can also use the *Ctrl* key and then click on the individual values to select multiple values. Again, clicking on **Include Values** makes the values available, or clicking on **Exclude Values** removes them from the list of available values. By clicking on a column header, you can select all the values in that column as follows:

Edit Field Dependency
[Help for this Page](#)

Controlling Field Speaker Event Status

Dependent Field Speaker Status

► Instructions

Click button to include or exclude selected values from the dependent picklist:

	New	Pending	Closed
Speaker Event Status:	Nominated	Nominated	Nominated
Speaker Status:	Self-submitted	Self-submitted	Self-submitted
	Not a good fit	Not a good fit	Not a good fit
	Request - sent	Request - sent	Request - sent
	Request - tentative	Request - tentative	Request - tentative
	Request - accepted	Request - accepted	Request - accepted
	Request - declined	Request - declined	Request - declined
	Speaker Approved	Speaker Approved	Speaker Approved
	Confirmation sent	Confirmation sent	Confirmation sent
	No comp pass	No comp pass	No comp pass
	Canceled	Canceled	Canceled
	Duplicate	Duplicate	Duplicate
	Ready to Publish	Ready to Publish	Ready to Publish

Click button to include or exclude selected values from the dependent picklist:

To change the values in your view, you can:

- Click on **View All** to view all available values at once
- Click on **Go To** and choose a controlling value to view all the dependent values in that column
- Click on **Previous** or **Next** to view the values in columns that are on the previous or next page
- Click on **View sets of 5** to view five columns at a time

Now, optionally, click on **Preview** to test your selections and then click on **Save**.

Dependent picklist considerations

There are various restrictions associated with the creation and configuration of dependent and controlling picklist fields that should be considered.

The following are the dependent picklist considerations:

Controlling fields

The following restrictions should be considered for controlling fields:

- Checkbox fields can be controlling fields
- Multiselect picklists cannot be controlling fields
- There is a maximum of 300 values allowed in a controlling field

Dependent fields

The following restrictions should be considered for dependent fields:

- Multiselect picklists can be dependent picklists
- Checkboxes cannot be dependent fields

Standard picklist fields

Standard picklist fields cannot be defined as a dependent list. They can only be set up as a controlling field.

Default values

You can set default values for controlling fields but not for dependent picklists.

Converting fields

When converting existing fields to dependent picklists or controlling fields, this can be done without affecting the existing values in records. Only for changes going forward are the dependency rules applied to the updates to existing records or new records.

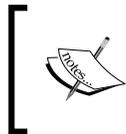
Field-level security

Field-level security settings for a controlling field and the dependent picklist are completely independent. Therefore, you must manually hide a controlling field whenever its related dependent picklist is hidden.

Page layouts

For best practice and improved user visibility, make sure the dependent picklist is lower on the page layout than its controlling field.

If a dependent picklist is required and no values are available for it based on the controlling field value, users can save the record without entering a value. In this scenario, the record is saved with no value for that field.



Make sure controlling fields are added to any page layouts that contain their associated dependent picklists. If the controlling field is not on the same page layout, the dependent picklist shows no available values.

Record types

The values in controlling fields are determined by the preselected record type and the values in dependent picklists are determined by both the record type and the selected controlling field value.

The values available in dependent picklists are, therefore, an intersection of the preselected record type and the subsequent controlling field selection.

Importing data

The data import utilities do not consider field dependencies. Therefore, any value can be imported into a dependent picklist field regardless of the value imported for a controlling field.

An overview of data import and export utilities

Salesforce provides data utilities that are available for the import and export of data to and from Salesforce. There are also a wide variety of third-party tools that allow data to be imported and exported from Salesforce and use the publicly available Salesforce APIs to provide data integration.

The third-party data import and export tools are not supported by Salesforce; therefore, we will not be covering these in this book but you can find information about them on the Internet.

Looking at the available Salesforce supported facilities to import and export data, we have the following specific options:

1. **Data Import Wizard**
2. **Individual Import Wizards:**
 - **Import Accounts/Contacts**
 - **Import Leads**
 - **Import Solutions**
 - **Import Custom Objects**
3. **Data Loader**

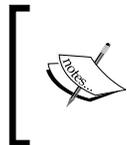
Data Import Wizard

The Data Import Wizard opens in a full browser window and provides a unified interface that lets you import data for a number of standard Salesforce objects, including **Account**, **Contact**, **Lead**, **Custom Object**, and **Solution**.

Individual import wizards

The Salesforce individual import wizard opens in small pop-up window and presents an easy-to-use multistep wizard to import new **Account (Person and Business Accounts)**, **Contact**, **Lead**, **Custom Object**, or **Solution** records into Salesforce.

The wizard can also be used for **Account (Person and Business Accounts)**, **Contact**, **Lead**, **Custom Object**, or **Solution** updates based on a matching identifier.



Contact and **Lead** can be updated by matching the e-mail address, and **Custom Object** or **Solution** can be updated based on custom object names, solution titles, Salesforce Id, or an external ID.

A **Comma Separated Value (CSV)** file format is required when using an import wizard where import wizard imports are limited to 50,000 records per session.



Account and **Contact** import wizards have a built-in de-duplicating functionality. **Account** can be matched using the account name and account site. For contacts, de-duplicating matching can be carried out using the first name, last name, or e-mail address.

At the time of writing this, Salesforce.com is planning to replace the individual import wizards with the unified **Data Import Wizard**.

Data Loader

The Data Loader is a client application from Salesforce for bulk import or export of data.

When importing data, the Data Loader loads data from CSV files or from a database connection, and the exporting of data is done using CSV files.

Data Loader and import wizards compared

With the Data Loader, you can perform operations such as insert, delete, update, extract, or upsert. You can move data into or out of any Salesforce object. There is less validation when adding data.

The import wizards have fewer options and are more limited as they only support **Account**, **Contact**, **Lead**, **Solution**, and **Custom object**. They have built-in de-duplication logic.

Use the Data Loader when:

- You need to load 50,000 or more records where the maximum is 5 million records
- You need to load into an object that is not yet supported by web-based import wizards
- You want to schedule regular data loads, such as nightly imports
- You want to save mappings for later use
- You want to export your data for backup purposes

Use web-based import wizards when:

- You are loading fewer than 50,000 records
- The object you need to import is **Account**, **Contact**, **Lead**, **Solution**, and **Custom object**

- You want to prevent duplicates by uploading records according to the account name and site, contact e-mail address, or lead e-mail address



If you're logging in from an IP that's not in the trusted range, you must add a security token as described in the earlier chapter.

Best practices for mass data updating

When carrying out any kind of mass data update or deletion in Salesforce CRM, you should ensure that the data to be changed is correct, of course, but you should also consider applying the best practices discussed in the upcoming sections:



Back up your data

Back up your data before performing a mass update or delete it by either requesting a data export or exporting your own report of the data.

Always include both the **Date/Time Stamp** and **Created by Alias** criteria in your mass delete to ensure that you are only deleting your imports and no one else's data.

Weekly export

Your organization can sign up to receive backup files of your data. You can export all of your organization's data into a set of CSV files.



The weekly export service can only be enabled by sending a request to Salesforce customer support.

With the data export feature, you can generate backup files manually once every six days or schedule them to generate automatically at weekly or monthly intervals.

When the export is ready, you will receive an e-mail with a link; navigate to the link provided.

To schedule a weekly export, navigate to **Setup | Data Management | Data Export**. Now, click on either the **Export Now** or **Schedule Export** buttons.

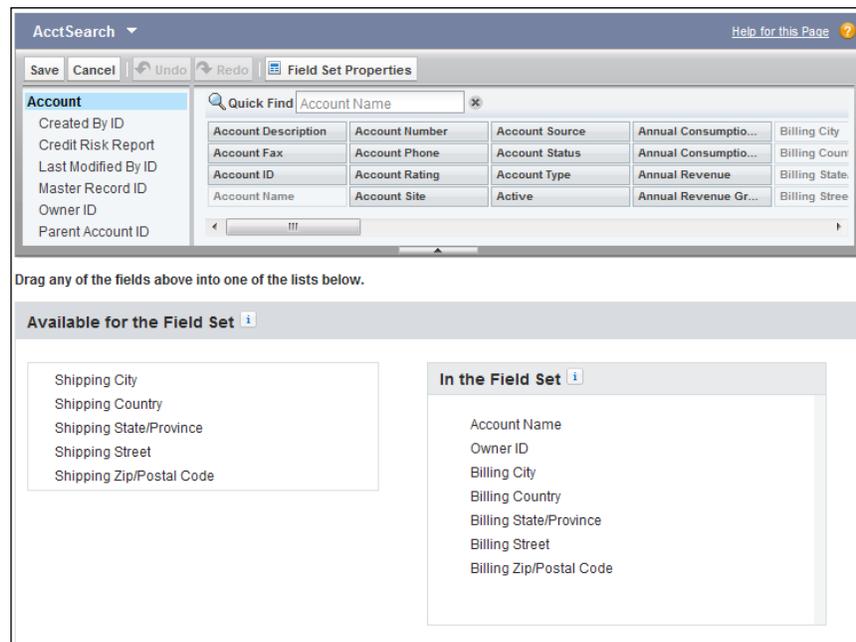
The **Export Now** option prepares your files for export immediately. This option is only available if a week has passed since your last export. The **Schedule Export** option allows you to schedule the export process for weekly or monthly intervals.

Field sets

Field sets combine the power of Visualforce to create custom user interface pages with what has always been a defining trait of the Force.com platform: the ability for administrators to customize the application using config over code.

A field set is a grouping of fields. For example, you could have an account search Visualforce page that uses a field set to control which account fields are returned in the search results. When a field set is added to a Visualforce page, developers can loop over its fields and display them. The same Visualforce page can therefore be used to present a different set of information, depending on which fields you wish to render.

Field sets enable you to customize the fields that appear on a custom Visualforce page using a simple drag-and-drop interface to add, remove, or rearrange fields from the field set without altering the Visualforce page, as shown in the following screenshot:



When a field is included in the **Available for the Field Set** section, it exists in the field set, but it will not be rendered on the Visualforce page. You can display the field by moving it from the **Available for the Field Set** column to the **In the Field Set** column.

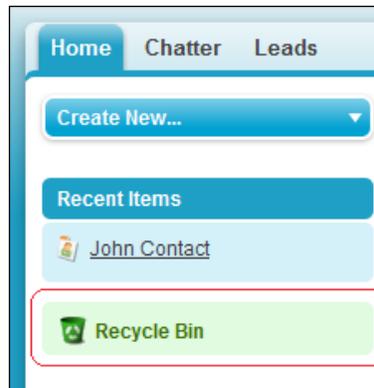
When a field is marked as **In the Field Set**, the field will be rendered on the Visualforce page. You can remove the field from the page by removing it from the **In the Field Set** column.

Folders

Folders are used to organize e-mail templates, docs, reports, and dashboards. Folder access is specified as read or read/write, which is explicitly set for the folder, and there is no rolling up of user permission to access using the role hierarchy. Only one type of media can be stored per folder; it is not possible to mix the types of files that are stored.

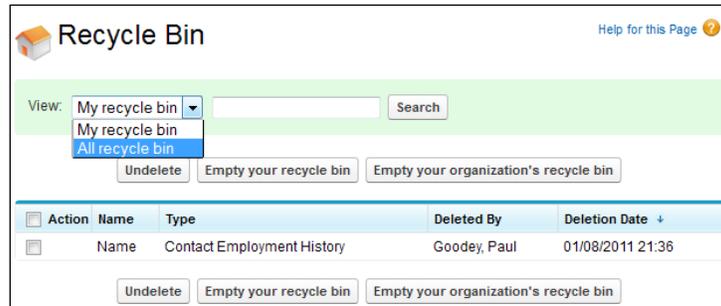
Recycle Bin

Recycle Bin can be accessed from the **Home** tab by clicking on the link in the sidebar, as shown in the following screenshot:



Recycle Bin is where the deleted data is stored and from where it can be accessed for 15 days, after which the data becomes hard deleted and is no longer recoverable.

Clicking on **Recycle Bin** allows you to view both your deleted items plus your organization's deleted items, as shown in the following screenshot:



You can use the **Empty your recycle bin** button to permanently remove deleted items prior to the 15-day expiration.



Records in **Recycle Bin** do not count against your organization's storage limits.

To calculate the number of records that your recycle bin can store, Salesforce uses this formula: 25 multiplied by the number of Megabytes (MB) in your storage.

For example, if your organization has 1 GB, which equates to 1000 MB (a 1000 MB storage unit is used here and not 1028 MB), then your limit is 25 multiplied by 1000 MB, which equals 25,000 records.

When your organization reaches the **Recycle Bin** limit, the Salesforce CRM application automatically removes the oldest records (if they have been in the **Recycle Bin** for at least two hours).

Data storage utilization

Salesforce CRM has two categories of storage, namely data – used to store records (for example, **Opportunity**, **Account**, or **Custom object** data records) – and file storage – used to store file attachments (for example, presentations, spreadsheets, images, or Adobe PDFs, and so on).

As a minimum, Salesforce CRM (Enterprise Edition) provides 1 GB for data storage and 11 GB for file storage. In total, this 12 GB storage amount (1 GB for data plus 11 GB for files) is the minimum total storage allocated for a Salesforce CRM organization. However, the storage amount increases as more active users are added, as there is also a 20 MB per user limit for data and 2 GB per user for file storage.

As an example, an organization with 500 active users sees the storage amount for data increase to 10 GB. This is calculated as 500 (users) multiplied by 20 MB, which equals 10,000 MB or 10 GB. The storage amount for files is increased to 1,000 GB (500 users multiplied by 2 GB)

To view your organization's used data space and used file space, navigate to **Setup | Data Management | Storage Usage**.

You can view the limits and used amounts for data and file storage, the amounts in use per record type, and the current file storage usage. You can also view the top users of data and file storage. To see exactly what is being stored by the listed users, you can click on that user's name.

Summary

In this chapter, we described the ways in which permissions to access data records in Salesforce are controlled by objects and profile permissions along with OWDs.

We looked at how access to records could be further widened through the use of Permission Sets, Sharing Rules, criteria-based sharing, and manual sharing. The mechanisms that are available to help manage the quality and integrity of data were covered, and we looked at data validation rules and dependent picklist fields. We also learned about options for importing and exporting data using the various import wizards for smaller fragments of data and the Data Loader for larger volumes of data.

In the next chapter, we will be covering Data Analytics, where we will see how we can report on the data in Salesforce. Also included in the next chapter is the setting up of reports, dashboards, custom reports, and the use of the Report Builder.

5

Data Analytics with Reports and Dashboards

In the previous chapter, we looked at how, through the use of various sharing rules, we can control the access to records in Salesforce CRM. Various mechanisms that help manage the quality and integrity of data were also described, along with an overview of the facilities to import and export data using import tools.

In this chapter, we will continue to look at the subject of data but will do so from the viewpoint of reporting, where we will describe the analytics building blocks within Salesforce CRM.

These analytics tools allow you and your users to customize and manage the reporting and visual representation of data. For example, the sales team can produce reports that show the sales pipeline, the marketing team can report on the progress of campaigns, and you can create reports that display the number of active users in your Salesforce organization.

The features available to report data are described in detail and include details of how to create, customize, and export purpose-built report data.

Reports can also be used to improve the quality of data. You can, for example, create a report that lists all accounts with missing annual-revenue fields.

We will also look in detail at how these analytic elements can be used to provide sophisticated dashboard charting and graphics.

Salesforce CRM analytics consist of the basic mechanisms of reports, dashboards, and folders:

- **Reports:** These are the key building blocks for analytics in Salesforce CRM, where a resulting set of records is displayed in rows and columns to match the specified criteria. Report results can be further filtered and grouped and can also be displayed as graphical summaries.
- **Dashboards:** These are visual components generated from data in reports. These components can include these five types: charts, gauges, tables, metrics, and Visualforce pages.
- **Folders:** These are used to store the reports and dashboards and can either be set to read-only or read/write. To configure which of your users have access to a folder, you can set it to be either accessible by all users, hidden from all users, or accessible only by certain users. When restricting to certain users, the options exist to restrict by **Public Groups, Roles, and Roles and Subordinates**.

Reports

Within Salesforce CRM, reports are accessed from the **Reports** tab (as shown in the next screenshot). There are a large variety of predefined reports that are automatically provided when your organization is first set up by Salesforce. These predefined reports are known as standard reports and are located in pre-prepared report folders known as standard report folders. For example, standard reports provide information about accounts and contacts; details about opportunities, forecasts, products, and sales pipelines; information about your organization's leads; details about forecast reports for customizable forecasting, and so on.

In this section on reports, we will outline the available standard reports and describe some of the key reports for system administrators in particular.

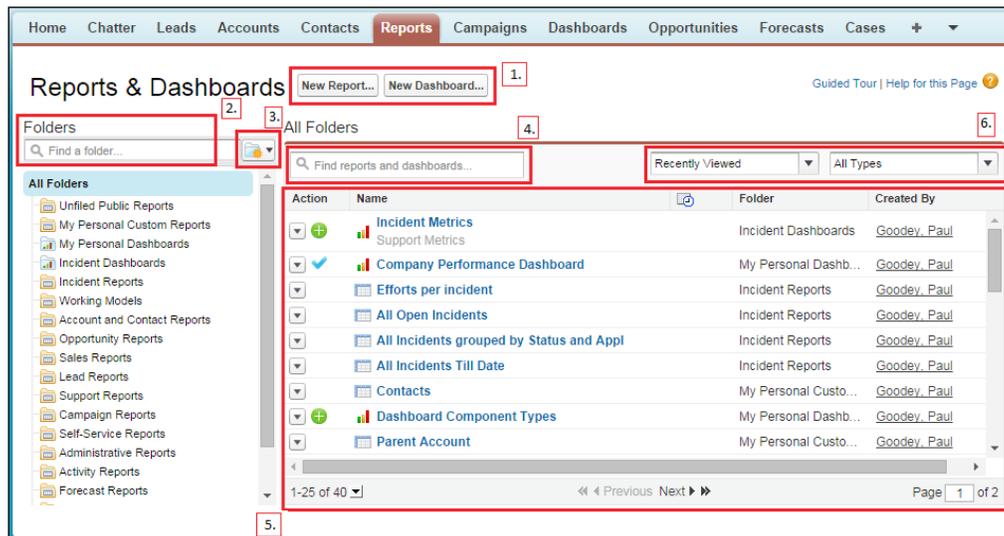
The predefined reports are suitable for existing objects and fields. They would not be suitable for reporting on any new objects that you have created. For this, we will look at how to extend the existing reports and how to create completely new types of reports, which are known as custom report types in Salesforce CRM.

When building reports from either standard or custom report types, Salesforce provides a full-featured drag and drop editor to simplify the setup and layout of reports.

We will first look at how to use report folders, which can help organize and control access to reports by your users within Salesforce CRM. When we click on the **Reports** tab, the **Reports and Dashboards** home page presents the following features:

- **1:** This represents the **New Report** and **New Dashboard** buttons.
- **2:** This represents the **Folders** search box, which allows users to search for specific report and dashboard folders.
- **3:** This represents the **New Report Folder** and **New Dashboard Folder** selections.
- **4:** This represents the report search box, which allows users to search for specific reports and dashboards.
- **5:** This represents **Reports and Dashboards Folders** pane with different icons to show whether the folder is a report or dashboard.
- **6:** This represents the main **Reports and Dashboards** list view section. This allows the filtering of **Recent Reports** tabs, displays appropriate reports, and allows the creation of new reports.

These features can be identified by their respective number, as shown in the following screenshot:



The Report and Dashboard Folders section

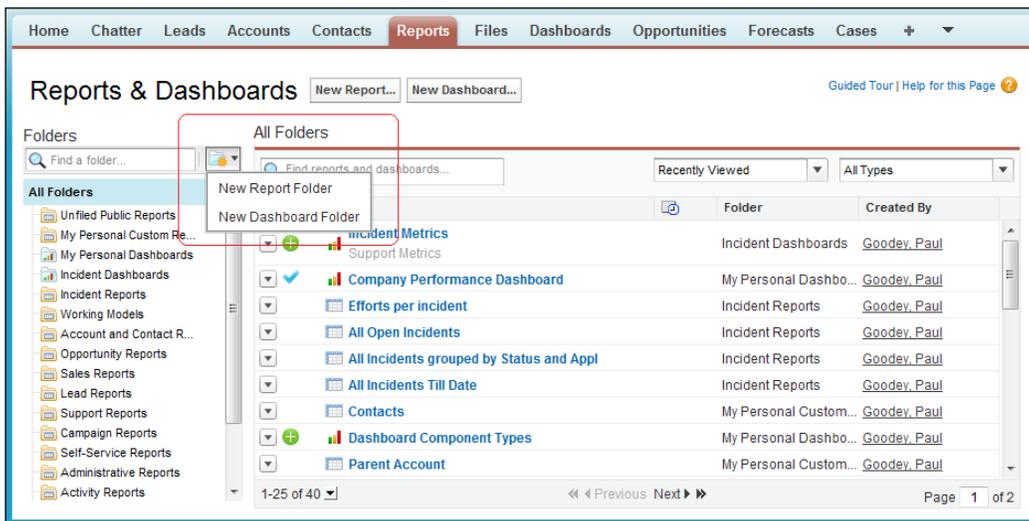
The **Report and Dashboard Folders** section allows you and your users to select the reports and dashboards that are stored in that specific folder.

In Salesforce CRM, you cannot save reports to the standard report folders. You can save reports only to the **My Personal Custom Reports** folder, the **Unfiled Public Reports** folder, or any custom report folder for which you have the appropriate read/write access.

 Standard reports cannot be deleted or removed, but the folder and the standard report type type, described later in this chapter, can be hidden.

Creating New Report and Dashboard Folders

Using the create folder icon and associated options allows you to create new reports and dashboard folders for custom reports and dashboards, as shown in the following screenshot:



The option to create new folders is not available to all users.

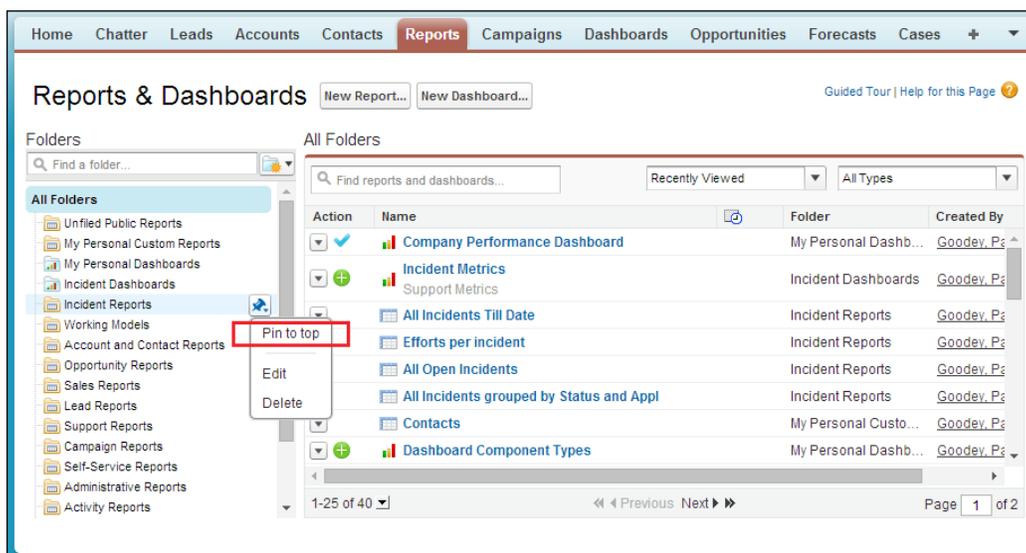
 The user permission required to access the **Create New Folder** option is **Manage Public Reports**.

It is good practice to create new folders that help manage the structure of reports of your organization.

 You cannot mix standard and custom reports in the same folder. 

Keep Favorite Report Folders In View

The reports and dashboards folder pane might contain many report and dashboard folders, which means your users have to scroll up and down the list to find the required folder. To help users keep their favorite folders at the top of the list, they can pin report and dashboard folders to the top of the folder list. This can be done by users by clicking to the right of the folder name and selecting the **Pin to top** option, as shown in the following screenshot:



Unlike many IT systems, creating reports in Salesforce CRM is very simple; users can create reports themselves. As it is so easy for users to create reports without careful control and an organized approach to report creation, it is easy for the number of reports to rapidly increase and become difficult to manage. You should, for example, create report folders that only certain users have access to. This could be restricted to certain departments or geographic regions. For example, reports could be restricted to Global Marketing or the North American Sales Team.

To create new report folders, click on the **Create New Folder** link where the **New Report Folder** page is presented, as shown in the following screenshot:

The screenshot shows the 'New Report Folder' configuration page. It includes fields for 'Report Folder Label', 'Folder Unique Name', and 'Public Folder Access' (set to 'Read Only'). There are two columns for report management: 'Unfiled Public Reports' and 'Reports in this Folder', both currently set to '--None--'. Between these columns are 'Add' and 'Remove' buttons. Below these are three radio button options for folder accessibility: 'This folder is accessible by all users, including portal users', 'This folder is accessible by all users, except for portal users' (which is selected), and 'This folder is hidden from all users'. There is also a section for 'This folder is accessible only by the following users:' with a search field set to 'Public Groups' and a 'Find' button. At the bottom, there are 'Available for Sharing' and 'Shared To' sections, each with a dropdown menu set to '--None--' and 'Add'/'Remove' buttons. The page concludes with 'Save' and 'Cancel' buttons.

Here, you provide the name of the report folder and decide whether the public folder access is set to be read-only or read/write. Optionally, you can move reports from the **Unfiled Public Reports** folder. You must specify the accessibility to users—you can select either accessible by all users, hidden from all users, or accessible by certain users. These options are in **Public Groups, Roles, and Roles and Subordinates**.

 Only users with the **Manage Public Reports** user permission are able to delete reports from the report folders. This is true even if the user has read/write access and has created the report themselves.

Enhanced sharing for reports and dashboards

The enhanced sharing for reports and dashboards setting lets users share reports and dashboards with other users, roles, or public user groups.



Salesforce instances that were created after the Summer '13 release have analytics folder sharing activated by default. If your Salesforce org was created before the Summer '13 release, you must activate enhanced sharing for reports and dashboards to make folder sharing available to your users.

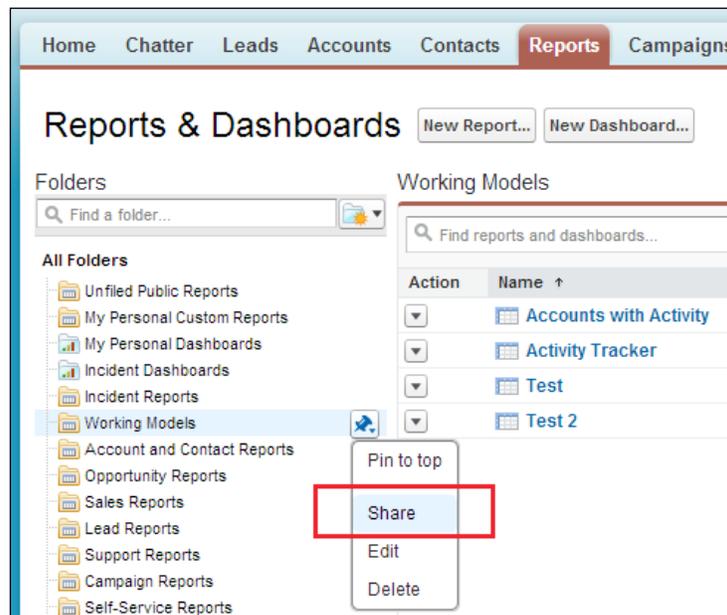
When enhanced sharing for reports and dashboards is activated, Salesforce converts the existing public report folder access levels, described previously, whereupon access to folders is then derived from the combination of folder access and user permissions.



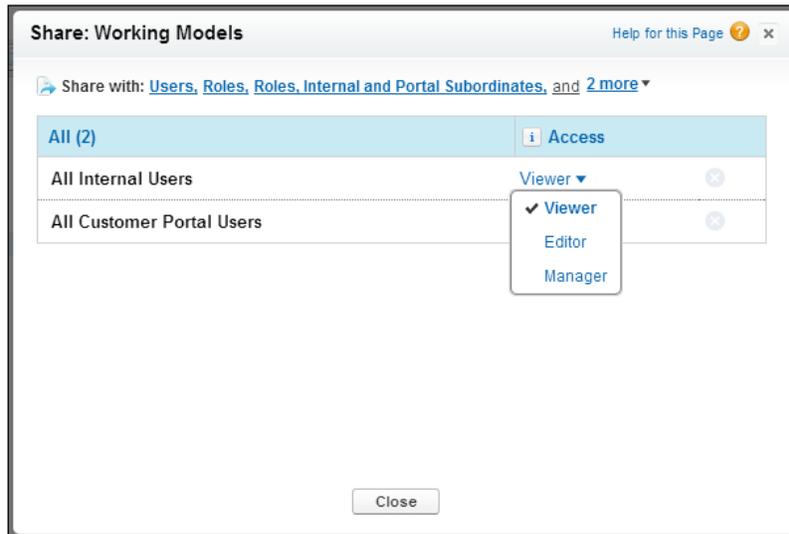
The enhanced access levels grant all users access as a Viewer (by default) to the report and dashboard folders that are shared with them.

To activate enhanced sharing for reports and dashboards, navigate to **Setup | Customize | Reports & Dashboards | Folder Sharing**. Select the **Enable access levels for sharing report and dashboard folders** checkbox and then click **Save**.

Users are then enabled to share the reports and dashboards folders by clicking to the right of the folder in the folders pane and selecting the **Share** option, as shown in the following screenshot:



When users click on the **Share** option, they are presented with a new screen that allows them to set the sharing access for other users where the options are **Viewer**, **Editor**, or **Manager**, as shown in the following screenshot:



The Viewer access setting

The **Viewer** access setting allows users to view, refresh, and run reports and dashboards.

The Editor access setting

The **Editor** access setting provides the same access as **Viewer**, plus the ability to edit, move, save, and delete reports and dashboards.

The Manager access setting

The **Manager** access setting provides the same access as **Editor**, plus the ability to share and rename the folder.

Creating reports

The basic steps to create new reports are as follows:

1. From the **Reports** tab, click on the **New Report...** button.
2. Select the report type for the report and click on the **Create** button.
3. Customize your report, and then save or run it.



Best practices for reports:

- Establish a report naming convention. For example, A01 NA April Sales, B02 INT April Sales, and so on—this can make it easier to refer to reports using the coding scheme (there is an upper limit of 40 characters).
- Use the **Description** field to describe exactly what the report is intended for (there is an upper limit of 255 characters).
- Consider creating reports that are only needed for dashboards in separate report folders, called something like `Dashboard Reports Sales` for example.
- Have regular "Spring Cleans" where you delete unwanted reports. You can also create temporary reports that are hidden from all users and save these reports there while you figure out whether they are required.

Selecting the appropriate report type is one of the most important steps in creating a report. Report types set the rules for which records can be shown in reports. They allow predefined sets of records and fields to be available within a report based on the relationship between a primary object and any related objects.

In the Salesforce CRM application, there are standard report types, and you, as the system administrator, can set up custom report types.



Terminology check

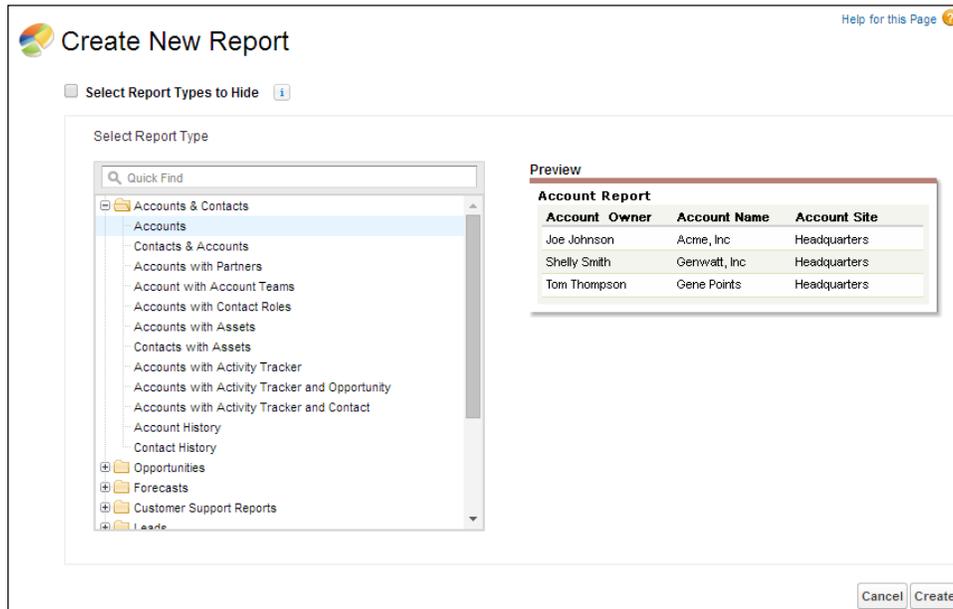
`Custom Report Type` is different from `Custom Report` in Salesforce CRM. When users create a new report using the **New Report** button on the **Reports** home page, this is sometimes known as a custom report. `Custom Report Type` is a report template that only system administrators can create. It provides a custom set of associated objects and fields to produce predefined report templates from which any user's custom report can be created.

Standard report types

Salesforce provides a large range of predefined standard report types along with standard report folders accessible from the Reports tab, as shown in the following table:

Standard report type	Standard report folder	Description
	Unfiled Public Reports	These are shared custom reports created by system administrators but not moved into a custom report folder
	My Personal Custom Reports	These are customized reports that users have saved by clicking on Save As or Save within a report
Account & Contacts	Account and Contact Reports	This is information about accounts and contacts
Activities	Activity Reports	This is information about calendar events and tasks
Administrative Reports	Administrative Reports	This is information about your Salesforce users, documents, and reports
Call Center Reports	Call Center Reports	This is information about phone calls that were handled with Salesforce CRM Call Center
Campaigns	Campaign Reports	This is information about marketing campaigns
Salesforce CRM Content	Content Reports	This is information about Salesforce CRM Content
Forecasts	Forecast Reports	These are details about forecast reports for customizable forecasting
Leads	Lead Reports	This is information about leads
Opportunities	Opportunity and Forecast Reports	These are details about opportunities, forecasts, products, and sales pipelines
Price Books, Products, and Assets	Products and Asset Reports	This is information about products, price of books, and assets

From the **Create New Report** screen, the creation of standard reports in Salesforce CRM begins with the selection of an appropriate report type, as shown in the following screenshot:



 By default, the standard report folders are set to read-only and are accessible by all users.

Administrative reports

Some of the most useful standard reports for system administrators are the administrator reports, which can be found in the *Administrative Reports* folder and can be used to analyze your Salesforce users' documents, reports, and login locations. For example, you can run reports on the active Salesforce users and see who has been logging in. The following administrative reports are available:

Report	Description
All Active Users report	This lists the active users in your organization and when they last logged in
Users Logged in This Week report	This lists all of the users who have logged in to Salesforce in the past seven days
Documents report	This lists the documents within each document folder
New Login Locations	This list users, IP addresses, and login dates

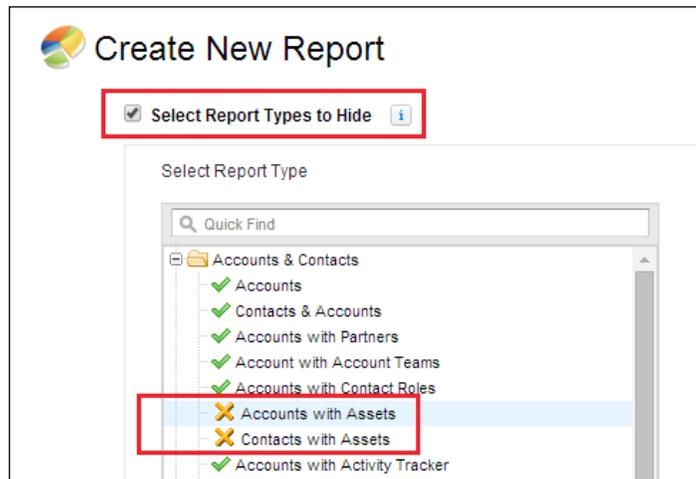


Creating a custom report to list your organization's reports

You can create a custom report that lists the reports within your organization and the last time each report was used. Choose **Administrative Reports** and then select **Reports** as the report type.

Hiding standard report types

There is a large number of standard report types provided by Salesforce and presented on the **Create New Report** page. Some of the report types might not be of any value in your organization and only serve to clutter up the list of useful report types. You can hide unwanted standard report types from users by enabling the **Select Report Types to Hide** checkbox to reveal a check mark or x against each of the report types. The green check mark next to a report type means it is visible and clicking on the check mark to change it to x means it is hidden, as shown in the following screenshot:



Hidden report types do not show up when using the search box on the **Create New Report** page, and if you hide all the report types in a folder, the folder becomes hidden too.

Custom report types

In addition to the standard report types, you can also create custom report types. Custom report types extend the types of reports from which all users in your organization can create or update custom reports.

Creating custom report types

Custom report types are set up using the following steps:

1. Define a custom report type by name, description, primary object, development status, and the category of report to store it.
2. Choose the related objects for the custom report type.
3. Specify the layout for the resulting standard and custom fields that a report can display when created using the custom report type.
4. Create a report from the Custom Report Type template to verify that all of the objects and field definitions are correct.

Once you have created a custom report type, you can update or delete it as required later on.



When a Custom Report Type template is deleted, any reports that have been created from it are also deleted. Furthermore, any dashboard components that have been created from a report that was created from a deleted Custom Report Type template will show an error message whenever viewed.

Defining custom report types

To navigate to the **Custom Report Types** page, navigate to **Setup | Create | Report Types**. Now, click on **New Custom Report Type**.

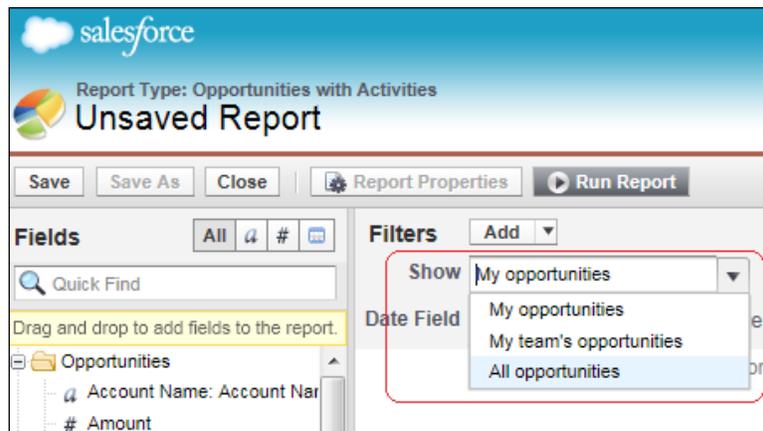
The screenshot shows the 'New Custom Report Type' configuration page, Step 1 of 2. The page is titled 'New Custom Report Type' and includes a 'Help for this Page' link. The main heading is 'Step 1. Define the Custom Report Type'. Below this, there are three sections: 'Report Type Focus', 'Identification', and 'Deployment'. The 'Report Type Focus' section includes a 'Primary Object' dropdown menu with a red error bar and the text '-Select-'. The 'Identification' section includes 'Report Type Label', 'Report Type Name', 'Description', and 'Store in Category' dropdown menu. The 'Deployment' section includes 'Deployment Status' with radio buttons for 'In Development' (selected) and 'Deployed'. The page has 'Next' and 'Cancel' buttons at the bottom right.

Step 1 – Define the Custom Report Type

From the **Primary Object** drop-down list, select the primary object from which you want to build your custom report type.

The primary object you choose determines the views available to users who are creating or running reports from your custom report type. For example, if you select accounts as the primary object for your custom report type, then users can view their report results by **All Accounts** or **My Accounts** from the report builder's **Show** drop-down list.

If you select opportunities, then when users create reports based on that report type, they can view their report results by **My opportunities**, **My team's opportunities**, or **All opportunities**, as shown next:



When a Custom Report Type template is saved, the primary object associated with it cannot be changed. So, if you want to change the primary object later, you have to define a new custom report type.

Now, enter the **Report Type Label** and the **Report Type Name** fields, and enter a description for the custom report type. The description will be visible to users who create reports and is used to help explain the purpose of the Custom Report Type template.


 The **Report Type Label** field can be up to 50 characters long and the description can be up to 255 characters.

Select the category in which you want to store the custom report type. Then, select a development status. Here, you can select **In Development** while you are first creating the custom report type to hide it from users while you are defining it. This will hide the Custom Report Type template and prevent users from creating and running reports from the report type. Choose **Deployed** when you are finished defining it and want to let users create and run reports using that Custom Report Type template.

Now, click on **Next** and then choose the object relationships that a report can display when run from a custom report type.

Step 2 – Define Report Records Set

After the initial definition of the Custom Report Type template, the object relationships for it can be selected. These object relationships determine the objects and fields available for display on reports. Using diagrams, they help you understand the object relationships formed within Custom Report Type, which will display the data fields whenever reports are created from the Custom Report Type template.

New Custom Report Type
Events with or without Sessions

Step 2. Define Report Records Set

This report type will generate reports about Events. You may define which related records from other objects are returned in report results by choosing a relationship to another object.

A Events
Primary Object

B Sessions
A to B Relationship:
 Each "A" record must have at least one related "B" record.
 "A" records may or may not have related "B" records.

C Speakers
B to C Relationship:
"B" records may or may not have related "C" records.

(Click to relate another object)

In this Custom Report Type example called **Events with or without Sessions**, we have object relationships for a custom primary object, *Event*, which has relationships with *Sessions* and *Speakers*.

To add an object that is associated with another object to the report type, click on the rectangle section, which is **(Click to relate another object)**. Then, select the object from the picklist.

The objects available for you to choose from are based on the primary object's relationships with other objects.

For example, our custom object, which is *Event*, is set as the primary object for the Custom Report Type template – so only standard and custom objects associated with *Events* can be chosen, such as *Sessions*. This also applies to additional objects added to the Custom Report Type template. In our example, with *Events* selected as the primary object and *Sessions* selected as the secondary object, only the objects associated with *Sessions* can be selected as the third object in the Custom Report Type template, which is our custom object, *Speakers*.



Although up to four object levels can be set up for Custom Report Type templates, some of the object combinations might not be able to reach that limit. For example, if you add contacts as the primary object, opportunities as the secondary object, and activities as the third object, then you cannot add any additional objects because activities do not have any child-object relationships.

Within the diagram, there is the option of setting the first relationship to the primary object with either **"A" records may or may not have related "B" records** or **Each "A" record must have at least one related "B" record**.

The following paragraph describes the effects of selecting may or may not options.

All subsequent objects automatically include the may-or-may-not association on the custom report type. For example, if accounts are the primary objects and opportunities are the secondary objects, and you choose that accounts may or may not have opportunities, then any third and fourth level objects included in the Custom Report Type template default to may-or-may-not associations.

Blank fields get displayed on report results for object B when object A does not have object B. For example, if a user runs a report on accounts with or without opportunities, then opportunity fields are displayed as blank for accounts without opportunities.

Edit layout

After clicking on **Save**, the Custom Report Type definition and the object relationships are set, as shown in the following screenshot:

Custom Report Type Help for this Page ?

Events with or without Sessions

[« Back to List: Custom Object Definitions](#)

Below is the information for this custom report type. You can click the buttons on this page to preview or update information for the custom report type.

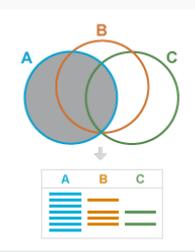
Custom Report Type Definition Edit Delete Clone

Report Type Label	Events with or without Sessions	Report Type Category	Other Reports
Report Type Name	Events_with_or_without_Sessions	Deployment Status	In Development
Description	Events with or without Sessions		
Created By	Paul Goodey , 18/04/2011 09:13	Modified By	Paul Goodey , 18/04/2011 09:13

Object Relationships Edit Object Relationships Help ?

Events (A)

- with or without related records from **Sessions (B)**
- with or without related records from **Speakers (C)**



Fields Available for Reports Edit Layout Preview Layout Fields Available for Reports Help ?

Source	Selected Fields
Events	30
Sessions	30
Speakers	28

Now the layout can be edited to specify which standard and custom fields a report can display when created or run from the template.

Clicking on **Preview Layout** shows you which fields will be displayed on the **Select Columns** page of a report based on this report type.

To start configuring the layout, click on **Edit Layout** and select fields from the right-hand side box and drag them to a section on the left-hand side, as shown in the following screenshot:

Edit Custom Report Type Help for this Page ?

Events with or without Sessions

Set how fields display on the Select Columns page in the report wizard via this report type by selecting fields from the right-hand box and dragging them to a section on the left. Arrange fields on sections as they should appear to users in the report wizard. Fields not dragged onto a section will be unavailable to users when they generate reports from this report type.

- You can select and move multiple fields together by using Ctrl+click to select fields individually or Shift+click to select a group of fields.
- To rearrange the sections, select the section header and drag it to the desired location.

Field Layout Properties Save Cancel Preview Layout

Total Fields in Layout: 88

[Edit Properties](#) [Create New Section](#)

Events Edit Delete			
Created By	Created Date	Event Descrip...	Event End Date
Event Evaluat...	Event ID	Event Manager	✓ Event Name
Event Start D...	Event Type	Event Vision	Final Attenda...
Gross Cost	Last Activity...	Last Modified...	Last Modified...
Maximum Regis...	MDF	Net Cost	Owner
Region	Targeted Atte...	Total Budget	Vendor
Vendor Street...	Venue	Venue City	Venue Country
Venue State	Venue Street ...		

Sessions Edit Delete	
# of Survey R...	AV Form
All Speakers ...	Attendance

Legend

- Not in Page Layout
- Used in Page Layout
- Selected
- Checked by Default
- Added via Lookup

View:
Events Fields ▼
[Add fields related via lookup >](#)

Events Fields [Page 1/2]
Next Page ▼

Created By	Created Date
Event Descrip...	Event End Date
Event Evaluat...	Event ID
Event Manager	Event Name
Event Start D...	Event Type
Event Vision	Final Attenda...
Gross Cost	Last Activity...
Last Modified...	Last Modified...

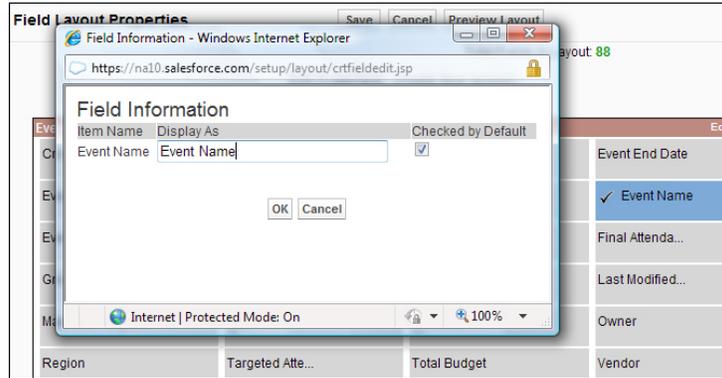
You can view a specific object's fields by selecting an object from the **View** drop-down list and arrange fields within sections as they should appear to users.

Fields not dragged onto a section will not be visible to users when they create reports using this report type.



You can add up to 1000 fields to each Custom Report Type template.

To rename or set which fields are selected for users by default, select one or more fields and click on **Edit Properties**, as shown in the following screenshot:

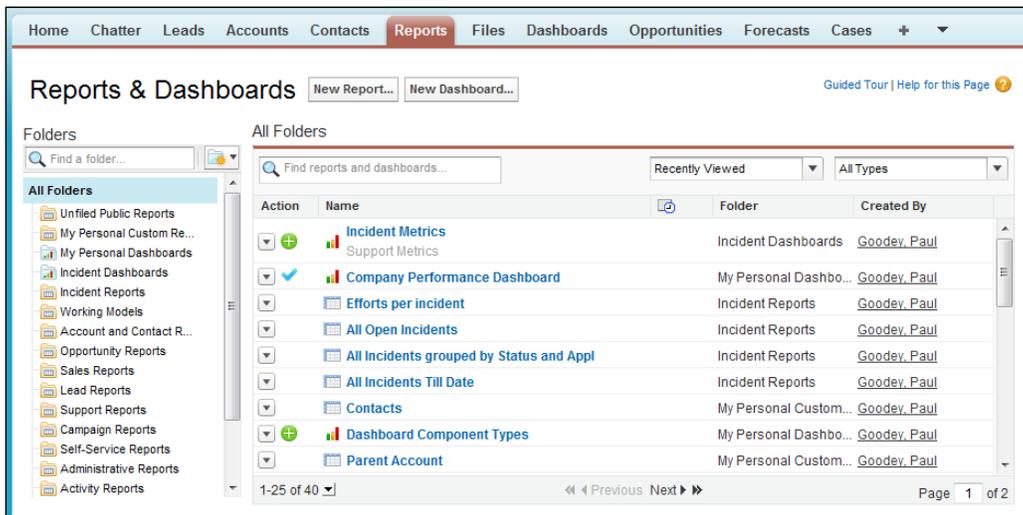


Click on the **Checked by Default** checkbox next to the field you want selected by default.

Change the text in the **Display As** field next to the field you want to rename. To rename the sections, click on **Edit** next to an existing section or create a new section by clicking on **Create New Section**. Now, click on **Save**.

Running reports

The **Reports** tab presents the report's home page on which users can search for reports and select or create a folder for reports.



The list of folders (represented by the folder icon) displays all the report folders that the user has permission to access. Within this section, you can view, edit, and manage all of your organization's public report folders. By clicking on the **Reorder Folders** option, you can change the order in which folders appear in the subtab.

The section on the right-hand side displays the selected report folder and allows users to click on the **Actions** drop-down, which appears as the first column. Here, the options are **Customize**, **Delete**, and **Export**.

Choosing the **Delete** option will remove the report for all users and move it to the recycle bin. Here, you are prompted with a warning before the deletion is carried out.

Before doing so, you would need to check whether the report is required, as it will be removed for all users, although you would be able to recover it from the recycle bin for 30 days if necessary.



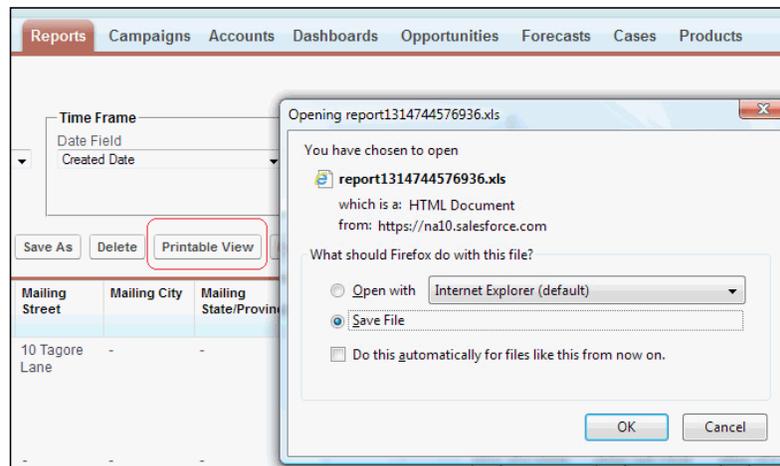
You cannot delete reports that are being used by dashboards. To delete these reports, you must first delete the calling dashboard component.

Users with appropriate permissions can click on **Export** to export a report directly to an Excel spreadsheet or CSV file, which is described next.

Printing and exporting reports

To print a report, users can perform the following steps:

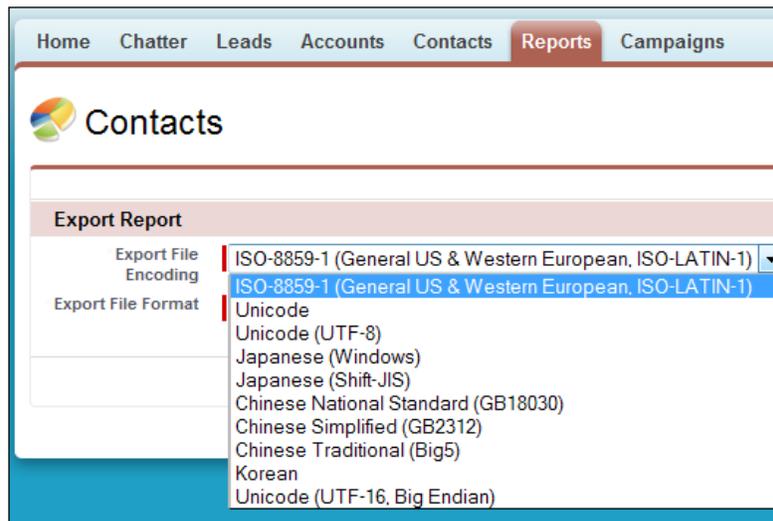
1. Click on the **Printable View** button to open (or save) the report as a printed view, as shown in the following screenshot:



2. Click on the print icon.

To export a report, users with the system permission **Export Reports** (either within their profile or via a permission set) can perform the following steps:

1. Click on **Export Details**.
2. Set the appropriate file encoding option for the language. The default option is **ISO-8859-1 (General US & Western European, ISO-LATIN-1)**, as shown in the following screenshot:



3. Set the **Export File Format** field to either Excel or CSV (comma delimited) format.
4. Click on **Export**.

In the browser's **File Download** dialog, users can then choose where to save the file on their local or network disk.

 Up to 256 columns and 65,536 rows of data can be exported from a report.

Report considerations

There are various issues to consider when running reports, whether in Salesforce CRM or on any other information system. There are typical limits to the volume of data that can be processed or restrictions to the type of changes that can be made to existing reports. Both the methods of controlling the amount of data that is returned in Salesforce and the effects of changing aspects of existing reports are described next.

Running large reports

If your report returns more than 2,000 records, only the first 2,000 records are displayed. To see a complete view of your report results, click on **Export Details**.



Reports that take longer than 10 minutes to complete will be canceled by the Salesforce system.

Report timeout warning

The report timeout warning analyzes reports that are invoked from the **Run Reports** page. The standard timeout for reports is 10 minutes. If the report is identified to be highly complex and is likely to time out, a warning is displayed.

The report timeout warning analyzes reports that are activated manually and ignores reports run via dashboards or scheduled reports.



You can have the timeout period for reports extended from the default 10 minutes by sending a request to Salesforce customer support.

If your organization has extended the limit to, say, 20 minutes, the report timeout warning might be less likely to appear. However, bear in mind that highly complex reports might still time out in the future.



Salesforce recommends that you follow the steps outlined in their online help section, **Tips for Improving Report Performance**, to simplify the report.

You can disable the report timeout warning by navigating to **Setup | Customize | Reports & Dashboards | User Interface** settings. Uncheck the **Enable Report Timeout Warning** checkbox and then click on **Save**.

Exporting reports to the background

Exporting reports to the background enables you to run reports in the background so that you can continue working in Salesforce without waiting for report results to be displayed. Exporting reports to the background is very useful when creating large reports that would otherwise time out due to the volume of resulting report data.

When the report has finished running and the results are ready for viewing, an e-mail notification is sent by Salesforce. The e-mail contains a link that, when clicked on, enables the viewing of the report information. From this page, you can then download the report results in a CSV format.



The feature to export reports to the background can only be enabled by sending a request to Salesforce customer support.

User verification test

For security purposes, user verification can be set up to require users to be tested before exporting data from the Salesforce CRM application. This text data-entry test prevents automated programs from attempting to access the data from within Salesforce. This feature is available on request from Salesforce customer support.

To pass the test, users must type the two words displayed into a textbox field and submit. Note that the words entered into the textbox field must be separated by a space.

Salesforce uses CAPTCHA technology provided by reCaptcha for the user verification testing.

CAPTCHA is an acronym that stands for **Completely Automated Public Turing Test To Tell Computers and Humans Apart**. It is a computer data-entry verification that ensures the entry is being carried out by a person. The verification requests the user to complete a small test, which the computer creates first, and then checks the result. Because only humans are able to solve the test, whenever the correct solution is returned, the computer accepts that it is a request by a person and not from an automated computer program.

Mass deleting reports

You can delete reports individually or use the **Mass delete reports** page to search and select multiple reports to be deleted. This can be used to help declutter the list of reports on the **Reports** tab and remove multiple reports that are no longer in use.

To mass delete reports, navigate to **Setup | Data Management | Mass Delete Records** and then click on the **Mass Delete Reports** link. Specify the criteria that the selected reports to be deleted must match, for example, "**Report Name contains activity**", and then click on **Search**. The list of any matching reports will then be presented, where you can then select and click on **Delete**, as shown in the following screenshot:

Mass delete reports [Help for this Page](#)

Personal reports of other users, reports used in dashboards or analytic snapshots are not deletable through mass delete.

Report Name	▼	contains	▼	activity	AND
--None--	▼	--None--	▼		AND
--None--	▼	--None--	▼		AND
--None--	▼	--None--	▼		AND
--None--	▼	--None--	▼		AND

	Report Name	Description	Folder	Name
<input checked="" type="checkbox"/>	Accounts with Activity Tracker Report		Working Models	Goodev, Paul
<input checked="" type="checkbox"/>	Activity Tracker		Working Models	Goodev, Paul



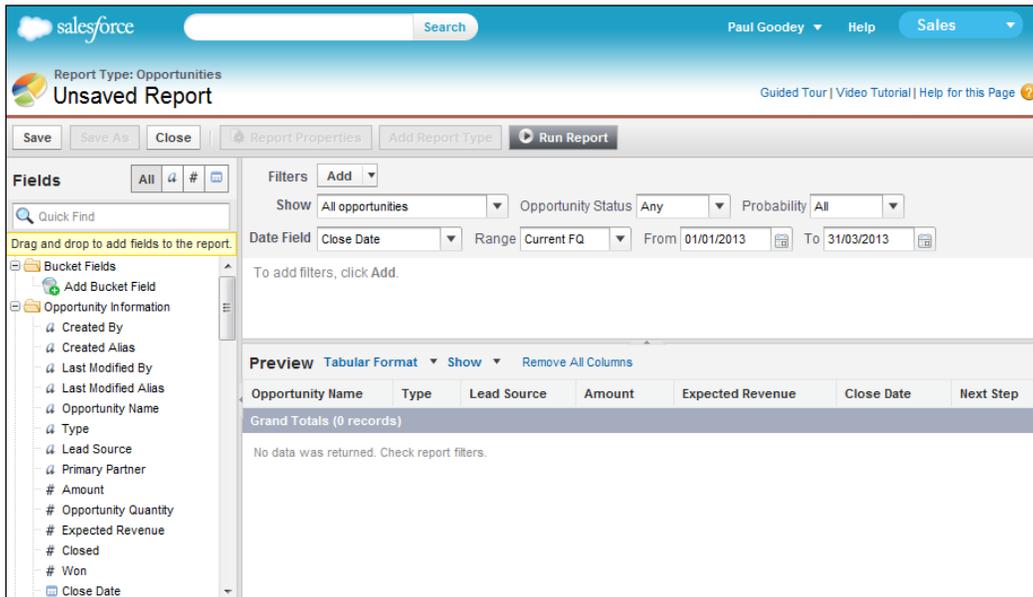
You cannot mass delete other users' personal reports, reports within dashboards, or analytic snapshots.

Report builder

The report builder in Salesforce CRM is a visual editor that enables the creation and modification of reports. The report builder interface uses the drag and drop functionality to configure reports, and the interface consists of the following three sections, which are known as panes:

- The **Fields** pane
- The **Filters** pane
- The **Preview** pane

The following screenshot shows you the report builder page, which is presented as a full-screen window in order to maximize the display of the **Fields**, **Filters**, and **Preview** panes:



To exit the report builder editor page, click on the **Close** button located in the top-left corner of the page, where you will be prompted to save any unsaved changes.

 You can also click on the Salesforce.com logo in the top-left corner of the page. However, you will not be prompted to save any changes.

We will now look at each of the panes in detail and will begin by first looking at the **Fields** pane.

The Fields pane

The **Fields** pane is shown on the left-hand side of the report builder page and, as the name suggests, lists all the accessible fields in the selected report type. The list of fields is organized by the sections that were set in the page layout of the associated report type. Here, fields can easily be identified using the **Quick Find** search box at the top of the pane. You can also limit the number of fields shown by using field type filters. In this pane, the fields can be dragged into the **Preview** pane to add them to the report. Additional calculated fields can be created just for the specific report. These are known as custom summary formulas and buckets.

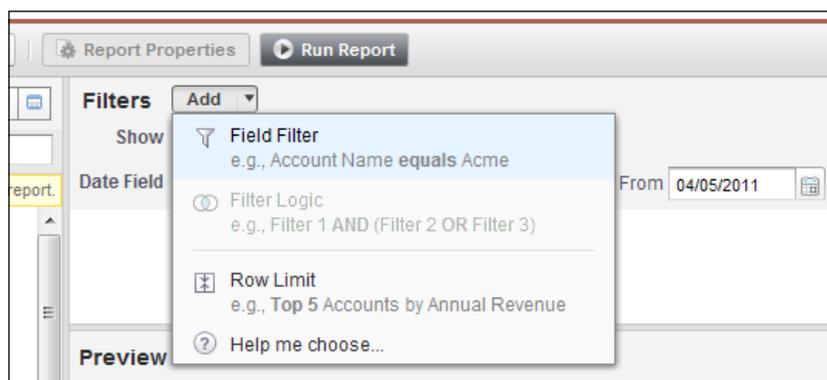
The Filters pane

To limit the number of rows of data results that are returned when you run a report, you can either limit your report results by clicking on the **Hide Details** button at the top of the report, or you can add custom filters. To restore the full set of returned data, click on the **Show Details** button.

For tabular reports (only), you can set the maximum number of records to be displayed by clicking on **Add Row Limit** in the report builder accessed from the **Add** button in the **Filters** pane.

The **Filters** pane is displayed in the top-right part of the report builder page and is used to configure the view, the time period, and also any custom filters to limit the data that is actually displayed as part of the report.

Within the **Filters** pane, you click on the **Add** box to add report filters, as shown here:



Report filters set the criteria for the data in a report according to the following:

Report filter	Description	Notes
Field Filter	Field Filter allows you to set the field, the operator, and the value.	For example, Account Name equals Acme .
Filter Logic	Filter Logic adds Boolean conditions to control how field filters are evaluated.	For example, Filter 1 AND (Filter 2 OR Filter 3) . You must add at least one field filter before applying filter logic.
Row Limit	With a Row Limit , you set the maximum number of rows to be displayed, choose a field to sort by, and choose the sort order.	This is only available for tabular reports. Tabular reports that have a limited row count can be used in dashboards.

The Preview pane

The **Preview** pane is where the report can be customized. You and your users can add, rearrange, and remove columns, summary fields, formulas, and field groupings. When you enter the report builder for the first time, the **Preview** pane shows you an initial result to provide a starting point from which the crafting and fine-tuning of the report results can be done. In the **Preview** pane, you can also set the required report format, which can be either **Tabular**, **Summary**, or **Matrix**.

The preview shows only a limited number of result records. You need to actually run the report in order to see all the results.

You can drag and drop report columns to change the order in which they are displayed. By clicking on the data-column header, you can sort your report using these columns. Sorting can also be performed by clicking on the column menu and then choosing either the **Sort Ascending** or **Sort Descending** option from the drop-down list.

 Sort is disabled when **Show Details** has not been selected.

If a field has been added to the preview pane and is not required, it can be removed by grabbing its column header and dragging it back to the **Fields** pane. You can also click on the column menu and choose **Remove Column** or click on **Remove All Columns** to clear the **Preview** pane from all the fields.

While **Show Details** is disabled, you can only add summary fields.

 **Setting the Date Range option to All Time**
When first creating a report involving dates, the date range might not initially be set appropriately, so there will be no obvious results returned. By setting the date range to **All Time**, you will most likely see some data returned, which can be useful as a quick check to see whether the report is working as intended.

Report formats

These four report formats are available in Salesforce CRM: **Tabular**, **Summary**, **Matrix**, and **Joined**. The features and benefits of each format are outlined next.

The Tabular report format

Tabular reports are the easiest and quickest way to report data. They can be linked to a spreadsheet, where they comprise a set of records listed in rows and fields (ordered in columns). Tabular reports are most suited for creating lists of records or a list with a single grand total, as they cannot be used to group data.

 Tabular reports cannot be used in dashboards unless the number of rows that are returned is limited.

The Summary report format

Summary reports are similar to tabular reports, except that they allow the grouping of rows of data. They can be used for reports to show subtotals based on the value of a field. Summary reports with no groupings are simply displayed as tabular reports.

 Summary reports can be used as the source report for dashboard components.

The Matrix report format

Matrix reports are similar to summary reports, but they also allow the grouping and summarization of data by both rows and columns and can be used to compare related totals.

Matrix reports are useful for summarizing large amounts of data to compare values in several different fields or to analyze data by date or by product, person, region, and so on.

 Matrix reports can be used as the source report for dashboard components.

The Joined report format

Joined reports are reports that can store and group multiple reports together and allow you to build a single report that contains data from multiple report types.

A joined report can have up to five report blocks that can be added from either standard or custom report types, but can only be included if they share a common object relationship. For example, if you have a joined report that contains the `Opportunities` report type, you can then add the `Contacts` report type as both `Opportunity` and `Contact` objects have a relationship with the `Accounts` object.

For joined reports with multiple report types, any field that is shared by all report types is known as a common field. Common fields appear in the **Common Fields** area in the **Fields** pane and can be used to group together the separate report blocks.



Joined reports can be used as the source report for dashboard components if the joined report includes a report chart by configuring the dashboard component with the **Use chart as defined in the source report** setting. These features are not available in joined reports: **Bucket** fields, **Cross** filters, and **The Rows to Display** filters.

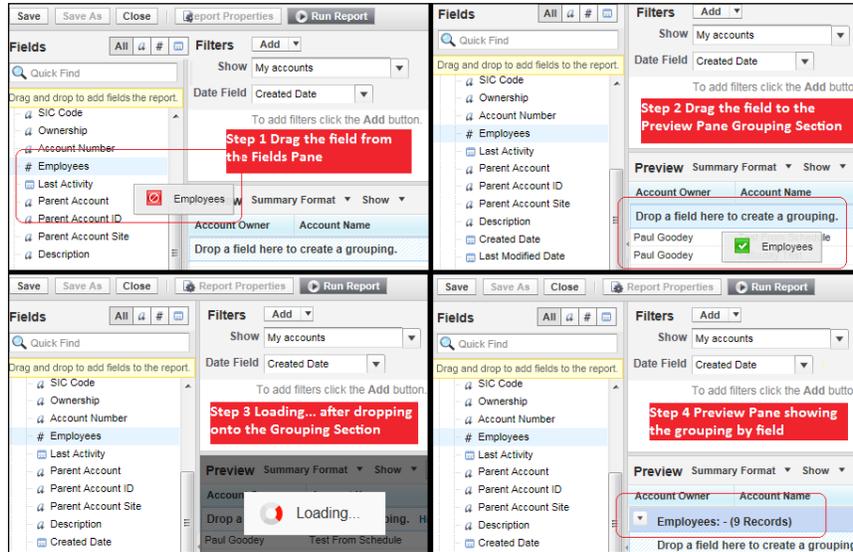
Groupings

Groupings can be added to summary, matrix, and joined reports to group together sections of report data. For example, you might want to group accounts by the number of employees that the account has.

To add a summary field, follow the steps as shown:

1. Drag a field from within the **Fields** pane.
2. Drag the field into the grouping section of the **Preview** pane.
3. Wait for the loading dialog to complete.

4. See what the field is showing in the grouping section.



This will produce a report showing the grouped sections, as shown in the following screenshot:

Account Owner	Account Name	Type
Employees: 100,000 (1 record)		
Paul Goodey	United Oil & Gas Corp.	Customer
Employees: 39,000 (1 record)		
Paul Goodey	University of Arizona	Customer
Employees: 24,000 (2 records)		
Paul Goodey	Express Logistics and Transport	Customer - Channel
Paul Goodey	United Oil & Gas, UK	Customer
Employees: 5,000 (2 records)		
Paul Goodey	Burlington Textiles Corp of America	Customer
Paul Goodey	Grand Hotels & Resorts Ltd	Customer
Employees: 3,000 (1 record)		
Paul Goodey	United Oil & Gas, Singapore	Customer
Employees: 1,000 (4 records)		
Paul Goodey	Pyramid Construction Inc.	Customer - Channel
Paul Goodey	Edge Communications	Customer
Paul Goodey	Company X	-
Paul Goodey	Carr	-

Summary reports can have up to three grouping levels.

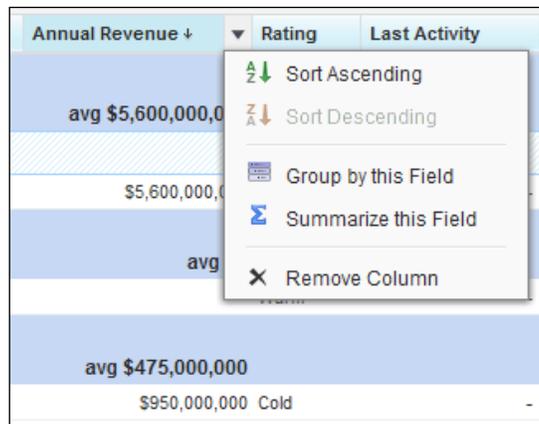
Matrix reports can have two rows and two column groupings. You cannot use the same field for both the row and column groupings.

Joined reports can have up to three grouping levels.

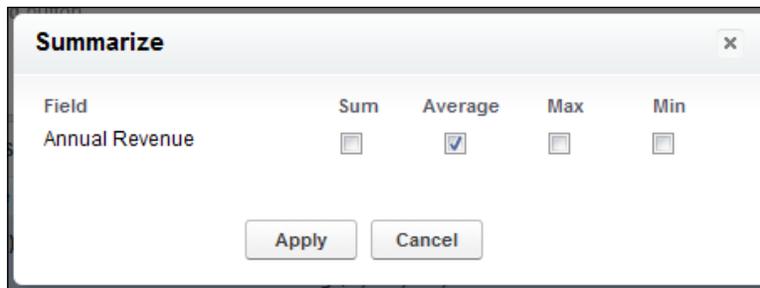
Summary fields

A summary field is the SUM, AVERAGE, MIN, or MAX for a number or a currency field. Summary fields are displayed at all grouping levels, including the grand total level for reports that have been created using the summary and matrix report formats.

To add a summary field, click on a column drop-down menu section (shown in the following screenshot) for a field in the report and choose **Summarize this Field**. You can also use this method to add a grouping by choosing **Group by this Field**, as shown here:



Clicking on the **Summarize this Field** button gives you the following options:



This will produce a report result, as shown in the following screenshot:

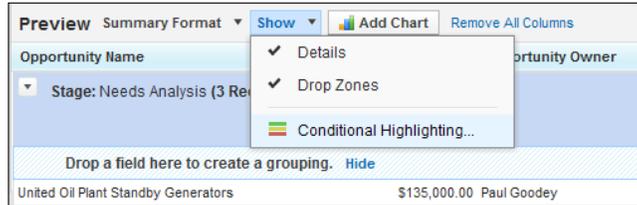
Account Owner	Account Name	Type	Rating	Annual Revenue
<input type="checkbox"/> Employees: 100,000 (1 record)				
				avg \$5,600,000,000
Paul Goodey	United Oil & Gas Corp.	Customer	Hot	\$5,600,000,000
<input type="checkbox"/> Employees: 39,000 (1 record)				
				avg \$0
Paul Goodey	University of Arizona	Customer	Warm	-
<input type="checkbox"/> Employees: 24,000 (2 records)				
				avg \$475,000,000
Paul Goodey	Express Logistics and Transport	Customer - Channel	Cold	\$950,000,000
Paul Goodey	United Oil & Gas, UK	Customer	-	-
<input type="checkbox"/> Employees: 5,000 (2 records)				
				avg \$425,000,000
Paul Goodey	Burlington Textiles Corp of America	Customer	Warm	\$350,000,000
Paul Goodey	Grand Hotels & Resorts Ltd	Customer	Warm	\$500,000,000
<input type="checkbox"/> Employees: 3,000 (1 record)				
				avg \$0
Paul Goodey	United Oil & Gas, Singapore	Customer	-	-
<input type="checkbox"/> Employees: 1,000 (4 records)				
				avg \$272,300,000
Paul Goodey	Pyramid Construction Inc.	Customer - Channel	-	\$950,000,000
Paul Goodey	Edge Communications	Customer	Hot	\$139,000,000
Paul Goodey	Company X	-	-	\$200,000
Paul Goodey	Carr	-	-	-

Conditional highlighting

Conditional highlighting is a very powerful way to show whether the values in reports are within acceptable limits at a glance. By setting up conditional highlighting, you can specify different colors for different ranges of values in your reports. It is relatively easy to set up, and it offers great visual benefits, yet it is a feature that seems to be underused by users within Salesforce CRM.

To enable conditional highlighting, your report must contain at least one summary field or custom summary formula.

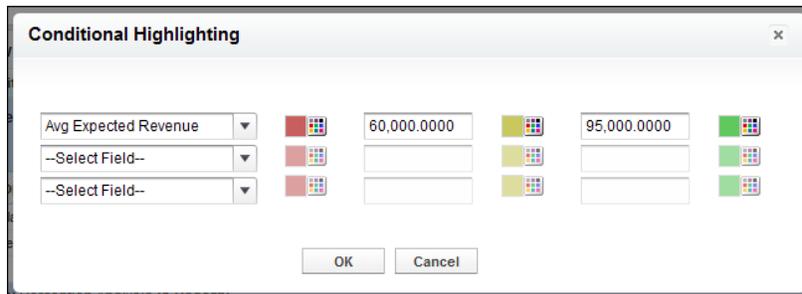
To set up conditional highlighting, click on **Show** and then click on **Conditional Highlighting**, as shown from within the **Preview** pane on the report builder page:



You then have the option to set colors according to whether the value falls below a low breakpoint threshold, above a high breakpoint threshold, or a value that sits between these range of values. The following table helps clarify the thresholds and the colors that will be seen, given the settings shown in the following screenshot:

The color to show data that is below the Low Breakpoint value.	The threshold value between the Low Color and the Mid Color values. In this example, this is 60,000.	The color to show data that is between the Low Breakpoint and High Breakpoint values.	The threshold value between the Mid Color and the High Color values. In this example, this is 95,000.	The color to show data that is above the High Breakpoint value.
In this example, this is Red.	Values that are exactly the same as the Low Breakpoint value are shown as Mid Color.	In this example, this is Amber.	Values that are exactly the same as the High Breakpoint value are shown as High Color.	In this example, this is Green.

The settings are shown in the following screenshot:



When running the report, the result appears as shown in the following screenshot:

Filtered By: Edit					
Stage equals Needs Analysis, Perception Analysis, Proposal/Price Quote Clear					
	Opportunity Name	Expected Revenue	Opportunity Owner	Account Name +	Avg Expected Revenue
<input type="checkbox"/>	Stage: Needs Analysis (3 records)				\$52,066.67
	United Oil Plant Standby Generators	\$135,000.00	Paul Goodey	United Oil & Gas Corp.	
	Starr Toolset	\$1,200.00	Paul Goodey	Starr Hardware Wholesalers	
	Toolset Q1	\$20,000.00	Paul Goodey	Drews	
<input type="checkbox"/>	Stage: Perception Analysis (1 record)				\$84,000.00
	Express Logistics SLA	\$84,000.00	Paul Goodey	Express Logistics and Transport	
<input type="checkbox"/>	Stage: Proposal/Price Quote (3 records)				\$95,500.00
	University of AZ Installations	\$75,000.00	Paul Goodey	University of Arizona	
	United Oil Refinery Generators	\$202,500.00	Paul Goodey	United Oil & Gas Corp.	
	Steane	\$9,000.00	Paul Goodey	Steane & Co	
Grand Totals (7 records)					\$75,242.86

Custom summary formulas

Custom summary formulas allow you to calculate values based on the numeric fields available in the report type. This means that you do not have to create custom formula fields for calculated results if they are only relevant in reports.

Formulas must be 3,900 characters or less. Up to five formulas can be created per report. Fields available for custom summary formulas are **Number**, **Percent**, and **Currency**. To add a new formula to a summary or matrix report, navigate to the **Fields** pane, where at the top, you will see the formulas folder icon. By double-clicking on the **Add Formula** option, you can define it and then click on **OK**. After you have defined a new formula on the report, it automatically gets added to the preview pane as a column for summary reports and as a summary field for matrix reports.

The following screenshot shows you the formula called **Avg Expected Revenue**, the top-left section of the **Fields** pane, and how it automatically appears in the preview pane as a column (on the far right) for the example summary report.

The screenshot displays the Salesforce Report Builder interface for a report titled "Opportunity Average Expected Revenue".

Fields Pane: The "Fields" pane on the left shows a list of fields under the "Formulas" section, including "Avg Expected Revenue".

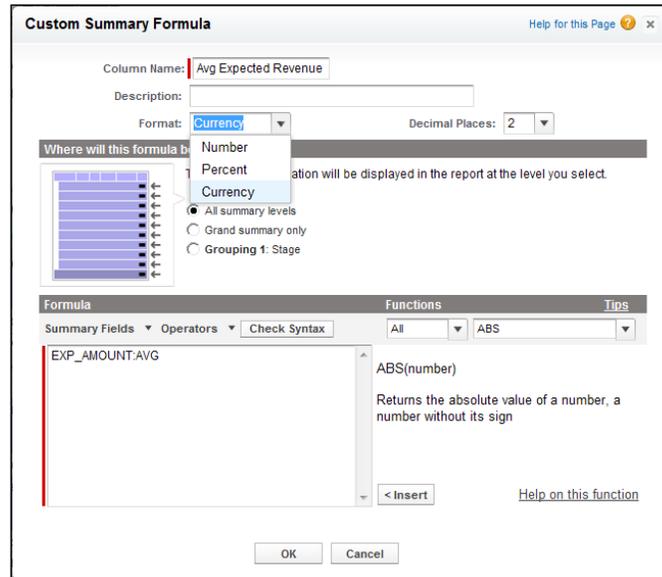
Filters: The "Filters" pane shows filters for "Opportunity Status" (Any), "Probability" (All), and "Date Field" (Close Date).

Preview Pane: The "Preview" pane shows a summary table with the following columns: Opportunity Name, Expected Revenue, Opportunity Owner, Account Name, and Avg Expected Revenue. The table is grouped by Stage.

Opportunity Name	Expected Revenue	Opportunity Owner	Account Name	Avg Expected Revenue
Stage: Needs Analysis (3 Records)				
Drop a field here to create a grouping. Hide				
United Oil Plant Standby Generators	\$135,000.00	Paul Goodey	United Oil & Gas Corp.	\$52,066.67
Starr Toolset	\$1,200.00	Paul Goodey	Starr Hardware Wholesalers	
Toolset Q1	\$20,000.00	Paul Goodey	Drews	
Stage: Perception Analysis (1 Record)				
Express Logistics SLA	\$84,000.00	Paul Goodey	Express Logistics and Transport	\$84,000.00
Stage: Proposal/Price Quote (3 Records)				
University of AZ Installations	\$75,000.00	Paul Goodey	University of Arizona	\$95,500.00
United Oil Refinery Generators	\$202,500.00	Paul Goodey	United Oil & Gas Corp.	
Steane	\$9,000.00	Paul Goodey	Steane & Co	
Grand Totals (7 records)				\$76,242.86

To define a formula field, follow these steps:

1. Click on **Add Formula** in the **Fields** pane.



2. Enter a column name for the formula. This will be displayed within the report.
3. Optionally, enter a description.
4. Select the data type from the **Format** picklist.
5. Select the number of decimal places from the **Decimal Places** picklist.
6. Set the option denoting where this formula is to be displayed.
7. The formula calculation will be displayed in the report at the level that is selected.
8. Build the formula by selecting one of the fields listed in the **Summary Fields** picklist, and then select the summary type:

Summary type	Description
Sum	The sum of data in a field or grouping of fields
Largest Value	The largest value of data in a field or grouping of fields
Smallest Value	The smallest value of data in a field or grouping of fields
Average	The average of data in a field or grouping of fields

9. Click on **Operators** to add operators to the formula. Select the function category, choose the function you want to use in your formula, and click on **Insert**.
10. Click on **Check Syntax** to check whether the formula contains any errors and then click on **OK**.

Hiding details when building new reports



Often when building new reports, you will not necessarily know just how many records are actually going to be returned. This can be the reason for the report in the first place. You might also be experimenting with the report format to see what data is being returned. In these cases, you should set the **Hide Details** option to prevent the detailed data being returned and show just the "skeleton" of the report—this shows you the number of rows that will be returned. Limiting rows on a tabular report allows you to use it as a source report for the dashboard table and chart components. However, if you change the report format, the **Row Limit** setting is automatically removed.

Bucket fields

Bucket fields allow you to categorize values based on fields available in the report type. This means that you do not have to create custom formula fields for categories or the segmentation of values if they are only relevant in reports. For example, sales managers can bucket or group opportunities by size based on amount, support managers can age cases based on days opened, and sales reps can group accounts into strategic accounts.



Fields available as bucket fields are **Number**, **Percent**, **Currency**, **Picklist**, and text fields.

Changing the report format

Sometimes, it is necessary to change the report format for the existing reports. The effects of changing the report format are as follows:

Report format change	Effects of the change
Change Tabular to either Summary or Matrix	The Rows to Display filter is not applicable for Summary or Matrix reports, and is therefore removed.
Change Summary, Matrix, or Joined to Tabular reports	Groupings are not applicable for Tabular reports and are removed from the report. The fields used for grouping are removed and not converted to columns in the tabular report.
Change the Summary report to Matrix report	The first Summary grouping is used as the first Matrix row grouping. The second summary grouping is used as the first column grouping. The third summary grouping is used as the second row grouping. Note that when using the report wizard, the third summary grouping is automatically removed.
Change Matrix report to Summary report	The Matrix first row grouping becomes the first summary grouping. The second row grouping becomes the third summary grouping. The first column grouping becomes the second summary grouping. The Matrix second column grouping is removed. Note that when using the report wizard, both the second row grouping and second column grouping are removed.
Change Tabular, Summary, or Matrix to Joined	The Matrix first row grouping becomes the first summary grouping. The second row grouping becomes the third summary grouping. The first column grouping becomes the second summary grouping. The Matrix second column grouping is removed. Note that when using the report wizard, both the second row grouping and second column grouping are removed.

Dashboards

Dashboards are visual information snapshots that are generated from the data in associated reports and are presented as graphical elements. These graphical elements are known as dashboard components, of which there are these five types: charts, gauges, tables, metrics, and Visualforce pages.

Dashboards can have up to 20 components, and you can control users' access to dashboards by storing them in folders with appropriate permissions, where folders can be public, hidden, or restricted to groups or roles.

Dashboards can be further configured to run with the concept of a **running user**, which means that the named user's security settings determine what data is to be displayed. Here, all dashboard viewers see data according to the security settings of the user who has been set as the running user irrespective of the dashboard viewer's own personal security settings.

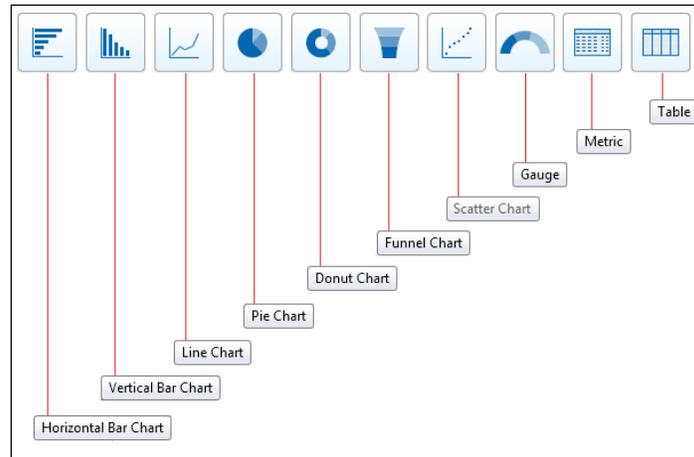
A more flexible and dynamic approach, however, allows you to set the running user to be the logged-in user so that each user is presented with the dashboard according to their own data access level. This is known as **dynamic dashboards**.

Dashboard component types

In Salesforce CRM, the following dashboard component types are available:

- **Horizontal Bar Chart**
- **Vertical Bar Chart**
- **Line Chart**
- **Pie Chart**
- **Donut Chart**
- **Funnel Chart**
- **Scatter Chart**
- **Gauge**
- **Metric**
- **Table**

The logos to access these dashboard component types are shown in the following dashboard:



Chart

Chart component types can be used to show data graphically, where this variety of chart types can be selected: horizontal and vertical bar charts, line charts, pie, donut, funnel, and scatter charts.

Gauge

Gauge component types can be used to show a single value that is to be shown as a part of a range of custom set values. Here, the ranges that can be set can represent, say, low, medium, and high values, and the value from the report is plotted accordingly.

Metric

Metric component types can be used to show a single value to be displayed.

Table

Table component types can be used to show a set of report data in a column form.

Visualforce page

In addition to the standard types, Visualforce page component types can be used to create a custom component type and present information in a way that is not available in the standard dashboard component types.

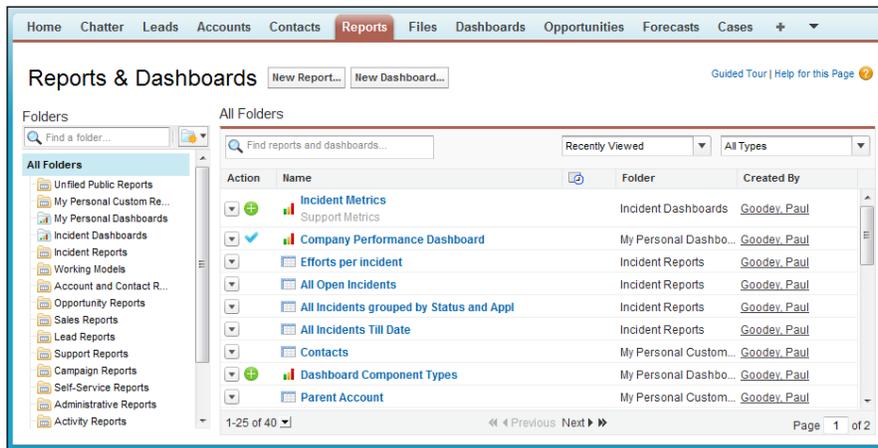
Creating dashboards

Before creating dashboards, you need to have pre-prepared source reports containing the data you wish to display.



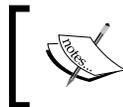
These source reports must be stored in folders that your intended dashboard viewers have access to, or they will not be able to view the information.

To create a dashboard, click on the **Reports** tab. This then presents the common reports and dashboards' main page with the **Reports & Dashboards** heading. On this page, click on the **New Dashboard...** button, as shown in the following screenshot:



Dynamic dashboards

A dynamic dashboard runs using the security settings of the user viewing the dashboard. Each user sees the dashboard according to his or her own access level. This approach helps you share one common set of dashboard components to users with different levels of access. A single dynamic dashboard can display a standard set of metrics across all levels of your organization.



Salesforce CRM limits permit organizations to have up to five dynamic dashboards for Enterprise Edition and up to ten for Unlimited Edition.

Setting up dynamic dashboards

Before setting up dynamic dashboards, you should create folders that are accessible to all dashboard viewers, in which you can store dynamic dashboards and corresponding component source reports.

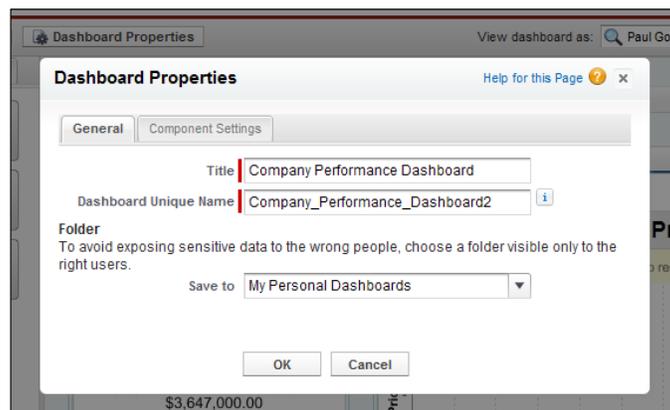
To create dynamic dashboards, follow the steps given here:

1. From the **Dashboards** tab, create a new dashboard by following the steps discussed earlier in this chapter.
2. Click on the drop-down arrow button to the right of the **View dashboard as field** option.
3. Select the **Run as logged-in user** option
4. Optionally, check the **Let authorized users change running user** checkbox to enable those with permission to change the running user on the dashboard view page.
5. Click on **OK**.
6. Finally, click on **Save** on the main dashboard.

Customizing dashboards

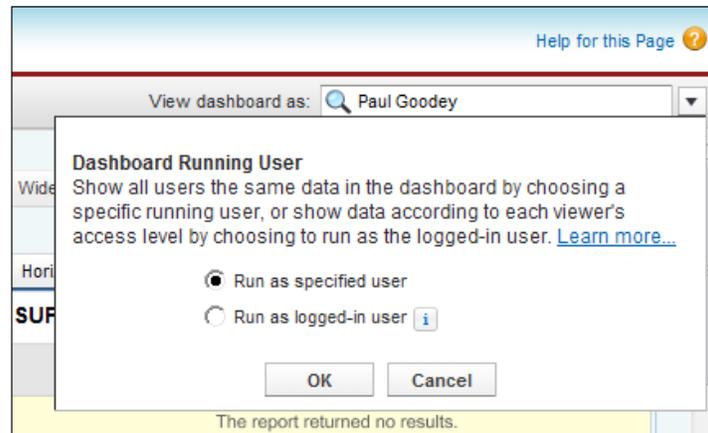
The Salesforce dashboard builder is a drag-and-drop interface that creates and modifies dashboards. To customize an existing dashboard, display it and then click on **Edit**. The dashboard builder main page presents options to set the properties for the dashboard and also change how the dashboard is viewed by selecting the appropriate running user option.

Clicking on **Dashboard Properties** allows you to set the title, a unique name, and the dashboard folder.

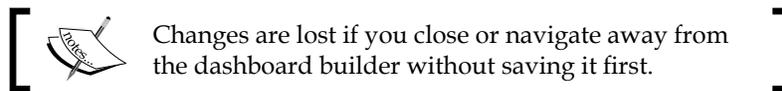


Setting the running user

To view or set the running user for the dashboard, choose from the **View dashboard as:** option located on the top-right section of the page.



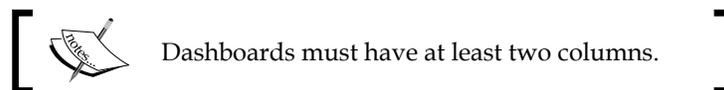
You can add a description to the dashboard by clicking on the **Click to enter a dashboard description** text at the top of the dashboard.



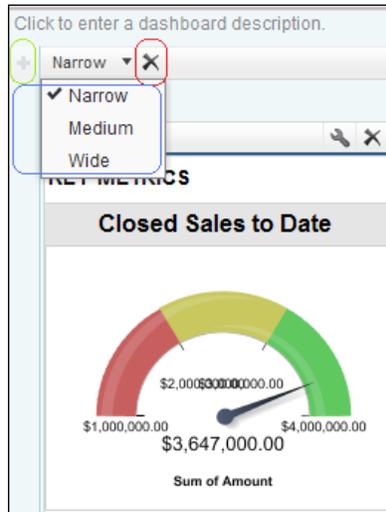
Column-level controls

Within the main dashboard's editing page, you are able to add the specific dashboard components:

- Click on + to add a new column. Dashboards can have up to three columns.
- Click on x on a column to delete it. Before removing a column, move the dashboard components to another column if you want them to remain visible.



- To set the width of the column, you can select either **Narrow**, **Medium**, or **Wide** in the column width drop-down list, as shown next:



If the component is a pie or donut chart with **Show Values** or **Show Percentages** enabled and **Legend Position** set to **Right**, the dashboard column width must be **Wide** for the values and percentages to be shown on the dashboard.

Component-level controls

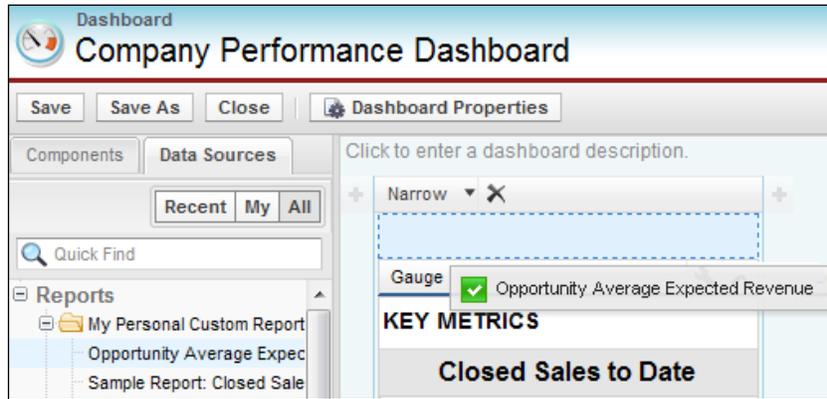
You can add components by dragging a component type onto a column and then dropping a data source (which is a source report) or a Visualforce page onto it.

You can also drop the data source first and then drop a component type onto it. To change the type or source after you have created it, you can drop a different one onto the component. Each component must have a type and a data source.

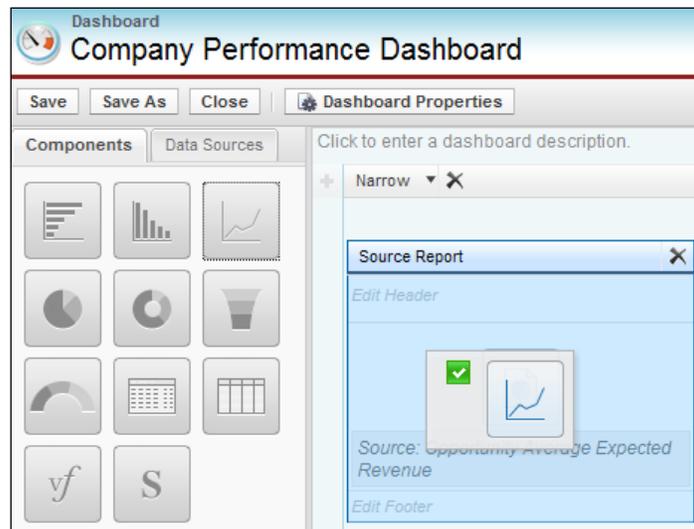


Each folder can display up to 200 data sources. However, if there are more than 200, you can use the **Quick Find** option or set filters to reduce the displayed list.

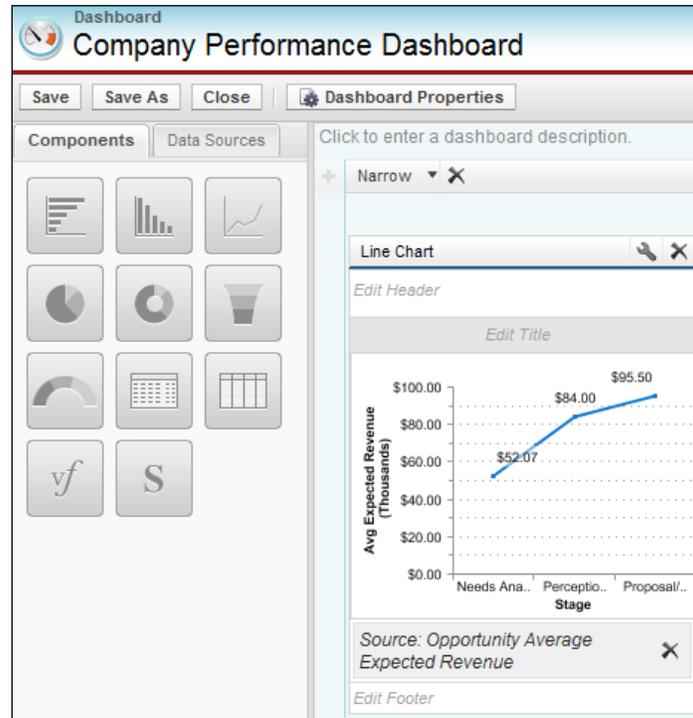
The following screenshot shows you the drag and drop feature using a report from the **Data Sources** tab:



To drag and drop a line chart from the **Components** tab, you simply select, hold, and drag the icon onto the source, as shown here:



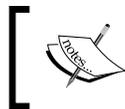
The following is the result:



Again, using the drag and drop feature, it is possible to rearrange components. Start by grabbing components by the header bar and then dragging them to the right-side location on the dashboard.

As shown in the preceding screenshot, you can edit or delete the dashboard component and also edit the header, title, and footer.

Here, you can also delete the data source associated with the dashboard component.



Dashboard metric components that are positioned above and below each other in a dashboard column are presented together as a single component.

Setting dashboard properties

To set dashboard properties, follow these steps:

1. Edit a dashboard and click on **Dashboard Properties**.
2. Enter a title for the dashboard.
3. Select a folder to store the dashboard.
4. Under **Component Settings**, select the title color and size, text color, and background fade. If you don't want a gradient, choose the same color for both **Starting Color** and **Ending Color**.
5. Click on **Save**.

Deleting dashboards

Deleting a dashboard also deletes the components within it, although the custom reports used by the components are not deleted. Deleted dashboards are moved to the recycle bin.

To delete a dashboard, follow these steps:

1. Click on the **Dashboards** tab.
2. Click on **Go To Dashboards List**.
3. Choose the folder where the dashboard is stored.
4. Click on **Del** next to the name of the dashboard.

Printing dashboards

Dashboards can be printed using the web browser's print option. Set the paper orientation to print in a landscape format so that it is wide enough for all three columns of dashboard components.



Some dashboards might not print as expected due to browser issues. Here, you can try resizing the dashboard columns and removing the browser-imposed headers and footers. Also, setting the paper orientation to print in landscape format can help ensure that the printed output is wide enough for all three columns that contain the dashboard components.

Summary

In this chapter, we looked at data analytics, where it was shown how data can be reported and presented within Salesforce CRM. We looked at setting up reports, dashboards, and how to use the report builder. We covered the use of building reports from standard and custom report types and looked at the mechanisms to share, hide, and mass delete reports.

In the next chapter, we will look at the methods to automate business tasks and activities to align them with business rules. The mechanisms that are available to help manage business processes will also be covered in detail, where we will look at the way approvals can be configured.

6

Implementing Business Processes in Salesforce CRM

In the previous chapter, we looked at data analytics, where we covered reports and dashboards.

In this chapter, we will cover in detail how, with the use of the workflow rules and approval process features within the Salesforce CRM application, you can automate and streamline the key business processes for your organization.

This chapter will focus on how you can configure actions for workflow rules and approval processes to automate, improve quality, and generate high-value processes within your organization.

The topics covered are as follows:

- Workflow rules
- The approval process
- Workflow actions
- The workflow queue
- The approval wizard
- Approvals in Chatter
- The process visualizer
- Visual Workflow

Workflow rules and the approval processes

The workflow rules and approval process features within the Salesforce CRM application allow you to automate and streamline the key business processes for your organization.

Workflow rules can be used to capture key business processes and events to generate automated actions. They allow you to configure various types of actions to be fired based on the field or fields of the record that meet predefined conditions. In essence, a workflow rule sets workflow actions into motion when its predefined conditions are met. You can configure workflow actions to execute immediately whenever a record meets the conditions specified in the workflow rule, or you can set time-dependent features that execute the workflow actions on a specific day.

Approval processes are a structured set of steps used to facilitate formal sign-off on data records. They can range from simple, single steps to complex, sophisticated routing to provide automated processing that your organization can use to approve records in Salesforce CRM. Along with the steps that must be taken, the approval process also specifies who must approve these steps. Approval steps can either be specified for all records included in the process, or they can be restricted to records that have certain attributes. Approval processes also specify the actions that are to be taken when a record is first submitted, approved, rejected, or recalled.

Workflow rules and approval processes provide benefits such as improving the quality and consistency of data, increasing data integrity, improving efficiency and productivity, lowering costs, and reducing risks.

Workflow rules and approval processes allow you to automate these types of actions: e-mail alerts, tasks, field updates, and outbound messages.

E-mail alerts can be sent to one or more recipients. For example, e-mail alert actions can be used to automatically send an account owner an e-mail whenever updates are made to one of their accounts by another user.

Tasks can be assigned to users or record owners. For example, task actions can be used to automatically assign follow-up tasks to a marketing executive whenever a new lead is entered in the system.

Field updates can be used to modify the value of a field on a record. For example, a field update action can be used to automatically update an opportunity field called *Next Step* when it reaches a certain sales stage.

Outbound messages can be used to send a secure configurable API message (in an XML format) to a designated listener. For example, outbound messages can be used to automatically invoke a new account creation process. This could be, say, whenever a new account is entered in the Salesforce CRM application by triggering an outbound API message to an external financial system.

Workflow rules in Salesforce CRM can be combined to help manage an entire process. For example, when a lead is entered through your website using the Web to lead (covered later), workflow rules can be used to automatically send a responding e-mail to the lead contact and also to someone within your organization. Here, a workflow rule can be set to create a task for one of your salespersons to telephone the lead contact along with a reminder e-mail alert to be sent after a specified number of days since the lead record has been entered.

If the salesperson changes the lead status, then a date field could be updated automatically with the date on which the lead was contacted.

Up until now, we have looked at the similarity of workflow rules and approval processes. However, there are some key differences. Workflow rules consist of a single step and a single result, whereas approval processes consist of multiple steps and different results depending upon whether the record is approved or rejected. Workflow rules trigger automatically, and when triggered the rules are not visible to the user. Approval processes, on the other hand, contain multiple steps, each requiring a specific *I approve or reject* user action by the specified approver(s).

In practice, the first step to create workflow rules and approval processes is to define and map out the process and for each step in the process, detail the objects, the criteria, the users, and the actions required.

Workflow and approval actions

Workflow and approval actions consist of e-mail alerts, tasks, field updates, and outbound messages that can be triggered either by a workflow rule or by an approval process.

- **E-mail alert:** This is an action that can be generated by both workflow and approval actions using an e-mail template that is sent to specified recipients that can be either Salesforce CRM application users or external e-mail recipients.
- **Field update:** This is an action that can be activated by the use of both workflow and approval actions, which specifies the field for update and the new value for it. The field's update action depends on the data type of the field, where you can choose to apply a specific value, clear the field, or calculate a value according to a criteria or a derived formula that you can specify.

- **Tasks:** These are workflow and approval actions that are triggered by workflow rules or approval processes, and they allow the assignment of tasks to a user that you can specify. You would also specify **Subject, Status, Priority, and Due Date** of the task. Tasks appear on the user's calendar and can be accessed by the **My Tasks** section of the **Home** tab or on the specific day for the task within the **Day View** section on the user's calendar. Tasks can be assigned on their own, but you can also combine them with an e-mail alert to inform the user.
- **Outbound message:** In Salesforce CRM, This an action that can be activated by both workflows and approvals that send information to a web URL endpoint—all of which you specify. The outbound message contains the data in specified fields in what is known as a SOAP message to the endpoint. As it requires the development of a receiving web service, this action is not covered in this book.

Configuring e-mail alerts for workflow rules and approval processes

To configure e-mail alerts, navigate to **Setup | Create | Workflow & Approvals | Email Alerts**, and then click on the **New Email Alert** button.

Within the **Email Alert Edit** page, the following settings are presented:

The screenshot displays the 'Email Alert Edit' interface. At the top, there are buttons for 'Save', 'Save & New', and 'Cancel'. Below the title 'Edit Email Alert', the following fields are visible:

- Description:** Notify Close Date
- Unique Name:** Notify_Close_Date
- Object:** Opportunity
- Email Template:** Notify_Close_Date
- Protected Component:** (checkbox is unchecked)
- Recipient Type:** Search: Case Team for: [] Find
- Recipients:** A dropdown menu is open, showing a list of available recipient types: Account Owner, Case Team, Creator, Email Field, Owner, Public Groups, Related Contact, Related Lead or Contact Owner, Related User, Role, Role and Subordinates, and User. 'User' is currently selected.
- Additional Emails:** A text area with a note: 'You can enter up to five (5) email addresses to be notified.'
- From Email Address:** Current User's email address
- Make this address the default From email address for this object's email alerts:** (checkbox is unchecked)

To set the details for the e-mail alert, carry out the following steps:

1. Enter a description for the e-mail alert.
2. Enter a unique name for the e-mail alert.



A unique name for the e-mail alert is required and used by the API and managed packages. The name is autopopulated when you enter the preceding field called **Description**. There are restrictions on permitted characters, so the unique name must begin with a letter and use only alphanumeric characters and underscores. Also, the unique name cannot end with an underscore or have two consecutive underscores.

3. Choose an e-mail template.



The **Protected Component** checkbox is used to mark the alert as protected. This option can be ignored as it is a setting used by developers who are building applications with the "managed release" package functionality. If you install a managed package, there are restrictions on what can be edited by nondevelopers. This is discussed later in the book.

4. Now, select who should receive this e-mail alert from the available options:

Recipients	Description
Account Owner	If Account Owner is selected, then the e-mail alert is sent to the user in Salesforce CRM who is set as the account owner of either the account record or the account that is related to the record. As this option requires an account relationship to be present, it is only valid on accounts, opportunities, contacts, and custom objects that are children of the account object.
Account Team	Choose from the list of users who are assigned to a particular account team role. Note that e-mail alerts are only sent when the rule is associated with the account object or any of its direct child objects.
Case Team	Choose from the list of users assigned to a particular case team role.
Creator	This is the user listed as the record creator and is the user who is set in the Created By field.
Customer Portal User	Choose from the list of users who are associated with a Customer Portal .
Email Field	This is an e-mail address field on the selected object, such as the Email field on contact records or a custom e-mail field.
Owner	This is the record owner.

Recipients	Description
Partner User	Choose from the list of users who are associated with a partner portal.
Portal Role	Choose from the list of users who are assigned to a particular portal role.
Portal Role and Subordinates	Choose from the list of users who are assigned to a particular portal role, plus all users in roles below that role.
Public Groups	Choose from the list of users in a particular public group.
Related Contact	This is an associated contact on the record. For example, you might have created a custom contact on the opportunity object called <i>Key Decision Maker</i> .
Related Lead or Contact Owner	This is a related user lookup on the owner fields set on either the lead or contact record that is associated to the record. As an example, for opportunities, this field could be set to a contact role field linked to a contact.
Related User	This is a user lookup field that is associated with the record. As an example, this field can be set to the Last Modified By field.
Role	Choose from the list of users who are assigned a particular role.
Role and Internal Subordinates	Choose from the list of users in a particular role, plus all users in roles below that role, excluding the partner portal and customer portal users.
Role and Subordinates	Choose from the list of users in a particular role, plus all users in roles below that role.
User	Choose from the list of available users in Salesforce CRM.
Sales Team	After having set up sales teams, this option allows you to choose from the list of users associated with a sales team.

Select the recipients who should receive this e-mail alert in the **Available Recipients** list and click on **Add**.



If you change the object after selecting the recipients, the **Selected Recipients** list will be automatically cleared.

Optionally, enter to and from e-mail addresses, and then finally, click on **Save**.

Here, you can do the following:

- Enter up to five additional recipient e-mail addresses (which might or might not be users in Salesforce)
- Set **From Email Address** to either the current user's e-mail address or to the default workflow user's e-mail address
- Finally, to begin using the e-mail alert, associate it with either a workflow rule or an approval process



Setting **From Email Address** also allows you to use a standard global e-mail address for your organization, such as `Customer_Services@WidgetXYZ.com`, instead of the default **From** field, which is the e-mail address of the user who updates the record. Only verified, organization-wide e-mail addresses will appear in the **From Email Address** picklist options.

There is a daily limit of 1,000 e-mail alerts per standard Salesforce license for workflows and approvals.

There is also an overall daily limit of 2,000,000 e-mail alerts for your entire organization, and when the daily limits are reached, a warning e-mail is sent out by the Salesforce CRM application to the default workflow user where one is set. If there is no default workflow user set, then the warning e-mail goes out to a system administrator.

Organization-wide e-mail addresses

By setting up organization-wide e-mail addresses, your users can share a set of common e-mail aliases. Here, you can define a list of organization-wide e-mail addresses for each user profile.

When sending e-mails from Salesforce, users with these profiles can then choose a different **From** address than the e-mail address that they have defined on their user record, and any e-mail responses are then returned to the organization-wide address.

To set up the list of organization-wide e-mail addresses, navigate to **Setup | Email Administration | Organization-Wide Addresses**.

From the **Organization-Wide Email Addresses** page, you can set the display name, the e-mail address, and the profiles that are permitted to use that address, as shown in the following screenshot:

Edit Organization-Wide Email Addresses [Help for this Page](#)

An organization-wide email address associates a single email address to a user profile. Each user in the profile can send email using this address. Users will share the same display name and email address.

Save Save and New Cancel

Organization-Wide Email Address ! = Required Information

Display Name

Email Address

Allow All Profiles to Use this From Address

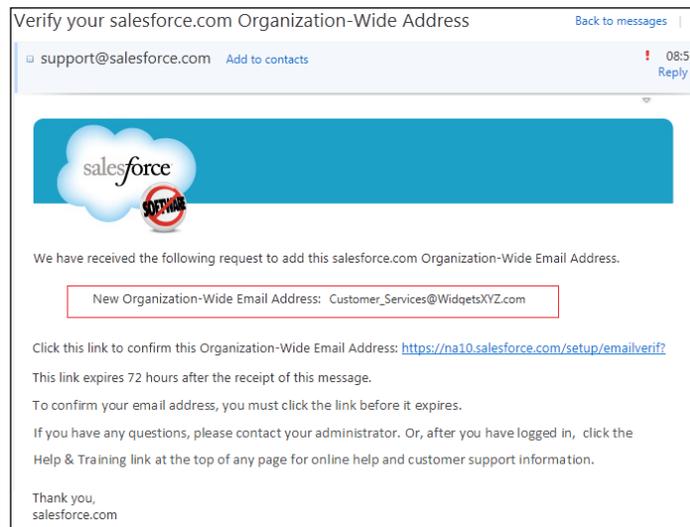
Allow Only Selected Profiles to Use the From Address

Profiles

- Standard Platform User
- Partner User
- Customer Portal Manager
- Authenticated Website
- High Volume Customer Portal
- System Admin Custom
- System Administrator**
- Solution Manager
- Read Only
- Custom: Sales Profile

Save Save and New Cancel

When the organization-wide e-mail address is saved or changed, Salesforce will send an e-mail to the address specified in the e-mail address field to verify that the e-mail address is valid, as shown next:



Now, the verified organization-wide e-mail addresses will appear in the **From Email Address** picklist options when configuring e-mail alerts, as shown next:

Configuring tasks for workflow rules and approval processes

To configure tasks, navigate to **Setup | Create | Workflow & Approvals | Tasks**, and then click on the **New Task** button.

From the **Step 1: Select object** page, select the object type for the record from the select object picklist and click on **Next**.



When creating tasks for custom objects, only custom objects that have been set with activities are available for selection in the picklist.

Within the **Step 2: Configure Task** page, the following settings are presented:

To set the details for the task, carry out the following steps:

1. You must select an individual or individuals for whom you can set the required **Assigned To** field. Here, the options when you click on the lookup dialog for the **Assigned To** setting allows for the selection of either **User**, **Role**, or **Record Owner**.

 If the assignee of a workflow task is a role, and that particular role has multiple users, the record owner is then assigned the task. This is done regardless of the type of role that the record owner has, which can cause some confusion.

This is because tasks cannot be assigned to more than one user, and hence, best practice dictates that you do not assign tasks to roles even though the option exists.

2. Enter a subject and a unique name for the task.

 A unique name for the task is required and used by the API and any managed packages. The name is autopopulated when you move from the preceding field called **Subject**. There are restrictions on permitted characters, so the unique name must begin with a letter and use only alphanumeric characters and underscores. Also, the unique name cannot end with an underscore or have two consecutive underscores.

3. Choose a due date, status, and priority where due dates appear in the time zone of the assignee.
4. Set the **Notify Assignee** checkbox to also send an e-mail notification when the task is assigned.

 The **Protected Component** checkbox is used to mark the alert as protected. This is used by developers who are building managed package applications for the AppExchange Marketplace (the AppExchange will be covered in a later chapter).

5. Optionally, enter any comments for the description information that is included with the task and then click on **Save**.
6. Finally, to set the task into action, associate it with the required workflow rule or approval process.



When the task is assigned, it will include a **Created By** field that contains the name of the person who saved the record that triggered the rule to assign the task.

Configuring field updates for workflow rules and approval processes

To configure field updates, navigate to **Setup | Create | Workflow & Approvals | Field Updates**, and then click on the **New Field Update** button.

Within the **Field Update Edit** page, perform the following steps:

1. Enter a name and a unique name for the field update.



Both the name and a unique name for the field update are required. The unique name is used by the API and managed packages. The name is autopopulated when you exit the preceding **Name** field. There are restrictions on permitted characters in that the unique name must begin with a letter and use only alphanumeric characters and underscores. Also, the unique name cannot end with an underscore or have two consecutive underscores.

2. Now optionally, enter a description for the field to update and then choose the object type to present the field to be updated, as shown here for the **Opportunity** object:

Field Update Edit Save Save & New Cancel

Identification ! = Required Information

Name

Unique Name

Description

Object

Field to Update

Field Data Type

Specify New Field Value

Date Options

Use a formula to set the new value
[Show Formula Editor](#)

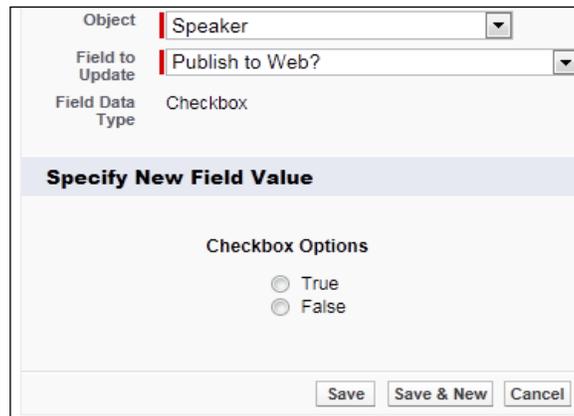
Use [formula syntax](#): e.g., Text in double quotes: "hello", Number: 25, Percent as decimal: 0.10, Date expression: Today() + 7

Save Save & New Cancel

Upon choosing the object and field to update, a new section called **Specify New Field Value** appears where you can set the logic of the desired field update. Here, the available options depend on the type of field you are updating with the following options.

Checkboxes

For checkboxes, choose **True** to select the checkbox and **False** to deselect it, as shown:

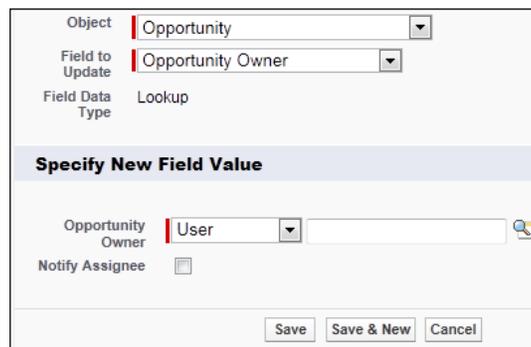


The screenshot shows a configuration window for a field update. At the top, 'Object' is set to 'Speaker' and 'Field to Update' is 'Publish to Web?'. The 'Field Data Type' is 'Checkbox'. Below this is a section titled 'Specify New Field Value' with a sub-section 'Checkbox Options' containing two radio buttons: 'True' (selected) and 'False'. At the bottom are 'Save', 'Save & New', and 'Cancel' buttons.

This is useful for automating the setting of status flags for records whenever a certain business process is complete. In the previous example, the field update for the **Publish to Web?** field allows the automatic setting of the checkbox option to be set **True**, say, so that the record can be published.

Record owners

For record owners, choose the user to whom the record should be assigned, as shown in the following screenshot:



The screenshot shows a configuration window for a field update. At the top, 'Object' is 'Opportunity' and 'Field to Update' is 'Opportunity Owner'. The 'Field Data Type' is 'Lookup'. Below this is a section titled 'Specify New Field Value' with a sub-section 'Opportunity Owner' containing a dropdown menu set to 'User' and a search icon. There is also a 'Notify Assignee' checkbox which is unchecked. At the bottom are 'Save', 'Save & New', and 'Cancel' buttons.

This is useful in order to automate the changing of the record owner for records whenever a certain business process is complete. For example, you could automate the field update of the record owner from, say, a marketing executive to an account manager if a lead matches certain criteria.

When selecting the user for the record owner field update, you must use the user lookup icon and select a specific active user. You cannot, therefore, automatically derive the new owner from any given criteria.



Selecting **Notify Assignee** allows the automatic sending of an e-mail to the new record owner whenever the field update fires.

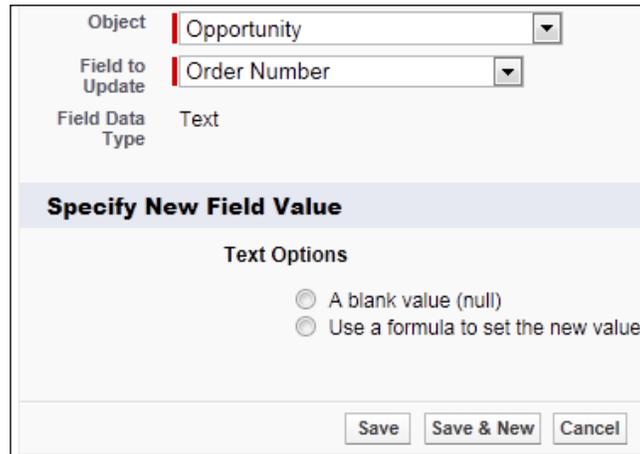
Picklists

For picklist fields, you can either select a specific value from the picklist, or you can select the value above or below the current value, as shown in the following screenshot. The above or below selection is based on the sorting order that is set in the picklist field definition.

The screenshot shows a configuration window for a field update. At the top, the 'Object' is set to 'Opportunity' and the 'Field to Update' is 'Stage'. Below this, the 'Field Data Type' is identified as 'Picklist'. A section titled 'Specify New Field Value' contains 'Picklist Options' with three radio button choices: 'The value above the current one', 'The value below the current one', and 'A specific value'. At the bottom of the window are three buttons: 'Save', 'Save & New', and 'Cancel'.

Other data types

For all other data types, you can set the following **Text Options**:



The screenshot shows the configuration interface for a field update. At the top, there are two dropdown menus: 'Object' set to 'Opportunity' and 'Field to Update' set to 'Order Number'. Below these, the 'Field Data Type' is set to 'Text'. A section titled 'Specify New Field Value' contains the 'Text Options' section, which has two radio buttons: 'A blank value (null)' and 'Use a formula to set the new value'. At the bottom of the form are three buttons: 'Save', 'Save & New', and 'Cancel'.

Follow these steps to finish the field update configuration:

1. Choose **A blank value (null)** if you want to remove any existing value and leave the field blank.

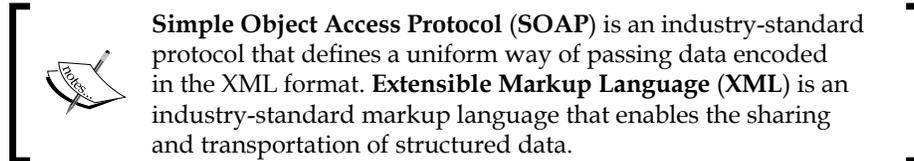
 This option is not available for required fields, checkboxes, and some other types of fields.

2. Choose **Use a formula to set the new value** to calculate the value based on the formula logic.
3. Now, click on **Save** to complete the configuration of the field update.
4. Finally, to set the field update into action, associate it with the required workflow rule or approval process.

Configuring outbound message notifications for workflow rules and approval processes

An outbound message in Salesforce CRM is an action that can be activated by both workflows and approvals that sends information to a web URL endpoint that you specify.

The outbound message contains the data using the specified fields in what is known as a SOAP message to the endpoint URL. Once the endpoint receives the message data, it consumes the information from the message and processes it.



As it requires the development of a receiving web-service endpoint, setting up this action is beyond the scope of this book.

Configuring workflow rules

You can configure your organization's workflow by creating workflow rules. Each workflow rule consists of:

- Criteria that cause the Salesforce CRM application to trigger the workflow rule
- Immediate actions that execute when a record matches the criteria
- Time-dependent actions that the Salesforce CRM application processes when a record matches the criteria and executes according to the specified time triggers

The following table is an overview of the key aspects of configuring workflow rules in Salesforce CRM:

Rules		Actions		Users
Object	Criteria	E-mail alerts	Immediate	People
			Time-dependent	
		Tasks	Immediate	
			Time-dependent	
		Field updates	Immediate	System
			Time-dependent	
		Outbound messages	Immediate	
			Time-dependent	
Example workflow rule				
Opportunity	Whenever an opportunity record is updated	E-mail Alert	Immediate	Account Owner



Create workflow actions ahead of workflow rules

Create actions and any associated e-mail templates before you start to configure workflow rules.

The following steps outline what's required to create a workflow rule:

1. Create the workflow rule and select the object.
2. Configure the settings and criteria for the workflow rule.
3. Specify the workflow actions.
4. Activate the workflow rule.

To create a workflow rule, navigate to **Setup | Create | Workflow & Approvals | Workflow Rules**.

The **Workflow Rules** details page shows you a list of the current workflow rules along with various properties, such as the associated object and whether the rule is active. On this page, you can create views to help filter and manage the list of rules as the numbers increase. The following screen shows you the list of all the workflow rules in our organization using the **All Workflow Rules** view.

All Workflow Rules Help for this Page ?

Configure your organization's workflow by creating workflow rules. Each workflow rule consists of:

- Criteria that cause salesforce.com to apply the workflow rule.
- Immediate actions that execute when a record matches the criteria. For example, salesforce.com can automatically send an email that notifies the account team when a new high-value opportunity is created.
- Time-dependent actions that salesforce.com queues when a record matches the criteria, and executes according to time triggers. For example, salesforce.com can automatically send an email reminder to the account team if a high-value opportunity is still open ten days before the close date.

Quick Tips

- [Getting Started](#)
- [Resources on CRM Community](#)
- [Useful Sample Workflow Rules](#)
- [Video Tutorial \(English Only\)](#)

View: All Workflow Rules [Edit](#) | [Create New View](#)

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All

		New Rule		
Action	Rule Name ↑		Description	Object
Edit Del Deactivate	Test			MD One
Edit Deactivate	Timer			MD One

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All

From the workflow rules list page, you can click on the **New Rule** button and then select an object (either a custom or standard object) on which you want to apply your new workflow rule. In the **Step 1: Select object** screen shown as follows, the standard object **Opportunity** has been selected.

Now, click on **Next** to navigate and display the **Step 2: Configure Workflow Rule** page to allow the rule settings and criteria to be specified, as shown in the following screenshot:

Configuring rule settings and criteria

In the **Edit Rule** section, you must enter a rule name and, optionally, you can enter a description for the rule.

Evaluation Criteria

In the **Evaluation Criteria** section, you choose the appropriate criteria that causes the Salesforce CRM application to trigger the workflow rule.

The criteria can be selected from the following three options:

- **created:** Choose this option to ignore any subsequent updates to existing records, as the rule will only ever run once – when the record is inserted.
- **created, and every time it's edited:** Choose this option to include new record inserts and updates to existing records. These actions cause repeated triggering of the rule as long as the record meets the criteria.

 You cannot add time-dependent actions to a rule if you choose the **created, and every time it's edited** option.

- **created, and any time it's edited to subsequently meet criteria:** Choose this option to include new records and updates to existing records.

 The rule is not retriggered on record updates that do not affect the specified rule criteria.

For example, if the updating of an opportunity record's probability to 90 percent causes the rule to run, with this option, the rule will only get triggered again if the probability changes and then changes back to 90 percent, regardless of how many times the record itself is updated.

Rule Criteria

In the **Rule Criteria** section, there are two ways to formulate the logic that is used to trigger the workflow rule. They are as follows:

- Run this rule if the following criteria are met
- Run this rule if the following formula evaluates to true

The run this rule if the following criteria are met option

The run this rule if the following criteria are met option is displayed by default and allows you to select the filter criteria that a record must meet to trigger the rule.

As an example, the filter has been set to:

- **Opportunity: Close Date equals NEXT 7 DAYS AND**
- **Opportunity: Closed not equal to True**

These criteria would allow us to construct a workflow rule that could be used to notify a salesperson that they have an open opportunity with a close date that will be reached within a week.

The screenshot shows the 'Rule Criteria' dialog box. At the top, it says 'Run this rule if the following criteria are met'. Below this is a table with columns for 'Field', 'Operator', and 'Value'. The first row is 'Opportunity: Close Date' with operator 'equals' and value 'NEXT 7 DAYS'. The second row is 'Opportunity: Closed' with operator 'not equal to' and value 'True'. There are three more rows with '--None--' in all columns. To the right of the table are 'AND' labels. At the bottom, there is an 'Add Filter Logic...' link and 'Save' and 'Cancel' buttons.

Clicking on the **Add Filter Logic...** link presents additional options to add rows and advanced filter conditions, as shown in the following screenshot:

This screenshot shows the 'Rule Criteria' dialog box with more options. The table from the previous screenshot is still there. Below the table are links for 'Add Row', 'Remove Row', and 'Clear Filter Logic'. The 'Filter Logic' section shows '1 AND 2'. Below that is an 'Advanced Filters' section with an example: 'Example: If you wanted to filter to key deals for your company, where key deals are deals over \$1,000,000 that are closing in the next 45 days, or deals owned by a VP, you would set up your filters as follows'. This is followed by a diagram showing 'ALL OPPORTUNITIES' being filtered into '1 and 2' and '3', which then combine into a 'RESULT'. The diagram shows two funnels: one for 'Amount > \$1M' and one for 'Close Date in next 45 days' and 'Deals owned by a VP'. The first funnel leads to '1 and 2' and the second to '3'. Both lead to 'RESULT'. Below the diagram is an 'Advanced Filter Conditions' box showing '1 AND 2 OR 3'. At the bottom are 'Save' and 'Cancel' buttons.

The **Add Row** link allows you to add more criteria options where up to a maximum of 25 can be added. The **Filter Logic** section allows you to use Boolean expressions to set the criteria. These expressions are known as **Advanced Filters**. For example, **(1 AND 2)** results in an expression that requires both of the first two filter lines to be valid.

The run this rule if the following formula evaluates to true option

The run this rule if the following formula evaluates to true option allows you to enter a formula that returns a value of `True` or `False`. The Salesforce CRM application triggers the rule if the formula returns `True`.

Workflow formulas can be used to capture complicated logic, as shown for this use case example: whenever an opportunity is set as lost where the sales stage was previously **"Negotiation/Review"** and the amount is greater than \$50,000, send an e-mail or task to be sent to Sales Management for a follow-up.

Rule Criteria

Run this rule if the following `formula evaluates to true` :

Example: `OwnerId <> LastModifiedById` evaluates to true when the person who last modified the record is not the record owner. [More Examples ...](#)

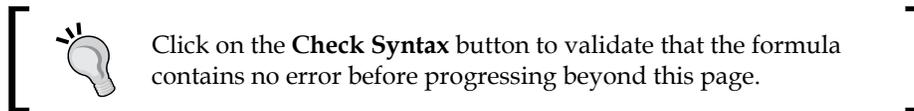
`AND`
(
 `ISCHANGED(StageName),`
 `ISPICKVAL(PRIORVALUE(StageName), "Negotiation/Review"),`
 `ISPICKVAL(StageName, "Closed Lost"),`
 `Amount > 50000`
)

No errors found



Some functions are not available in workflow rule formulas; you cannot create a formula in which a custom object references fields on a parent object.

In addition to the functions that are shown on the right-hand side of the **Rule Criteria** section, you can also use merge fields for directly related objects in workflow rule formulas. The **Formula evaluates to true** rule can be useful wherever it is needed to trigger some actions if the value of a particular field is being changed. As for all formula merge fields that allow you to reference fields on related objects across multiple relationships, the field name is prefixed by the name of the relationship. For standard relationships, the name of the relationship is the master object. For example, you can reference the account name merge field from an opportunity using `Account . Name`.



Now, click on **Save & Next** to proceed to the **Step 3: Specify Workflow Actions** page, which allows you to configure the workflow actions.

Specifying the workflow actions

The **Specify Workflow Actions** page allows you to add both immediate and time-dependent actions to the workflow rule, as shown in the following screenshot:

Step 3: Specify Workflow Actions
Step 3 of 3

Specify the workflow actions that will be triggered when the rule criteria are met. [See an example](#)

Rule Criteria (Opportunity: Close Date EQUALS NEXT 7 DAYS) AND (Opportunity: Closed NOT EQUAL TO True)
 Evaluation Criteria When a record is created, or when a record is edited and did not previously meet the rule criteria

Immediate Workflow Actions

Action	Type	Description
Edit Remove	Email Alert	Notify Close Date

▾

Time-Dependent Workflow Actions [See an example](#)

3 Days After Rule Trigger Date [Edit](#) | [Delete](#)

Action	Type	Description
Edit Remove	Email Alert	Notify Close Date

▾

Immediate workflow actions

Immediate actions are triggered as soon as the evaluation criteria are met. As shown in the preceding example, the Salesforce CRM application can immediately send an e-mail to the salesperson if an opportunity is created or edited and is still open seven days before the specified close date.

Time-dependent workflow actions

Time-dependent actions specify when Salesforce CRM will execute the workflow action. As shown in the preceding example, the Salesforce CRM application can automatically send an e-mail reminder to the salesperson 3 days later if an opportunity is created or edited and is still open seven days before the specified close date.



Time-dependent actions and time triggers are complex features with several considerations

Workflow rules that have time-dependent actions should be specified with a default workflow user to ensure they are fired for future actions. This is if the user who activated the workflow later leaves the organization and is set as an inactive user.

Adding immediate workflow actions

To add an immediate workflow action, click on the **Add Workflow Action** drop-down selection in the **Immediate Workflow Actions** section and choose either **New Task**, **New Email Alert**, **New Field Update**, **New Outbound Message**, or **Select Existing Action** to select an existing action to associate with the rule:

- **New Task** to create a task to associate with the rule
- **New Email** to create an e-mail alert to associate with the rule
- **New Field Update** to define a field update to associate with the rule
- **New Outbound Message** to define an outbound message to associate with the rule
- **Existing Action** to select an existing action to associate with the rule

Adding time-dependent workflow actions

To add a time-dependent workflow action, click on **Add Time Trigger** in the **Time-Dependent Workflow Actions** section. Then, specify the number of days or hours before or after a date relevant to the record, such as the date on which the record was created or modified or even for an opportunity close date, as shown in the following screenshot:

Edit Time Trigger Help for this Page ?

Opportunity

Workflow Time Trigger Edit

Workflow Rule: Close Date Within 7 Days

3 Days After Rule Trigger Date

- Rule Trigger Date
- Rule Trigger Date
- Opportunity: Close Date
- Opportunity: Created Date
- Opportunity: Last Modified Date

The **Add Time Trigger** button is unavailable if either:

- The rule criteria is set to **Every time a record is created or edited**
- The rule is already active (here, you must temporarily deactivate it in order to apply the action)
- The rule is deactivated but has pending actions in the workflow queue

Additional, immediate, or time-dependent actions can now be configured, and then finally, click on the **Done** button in the top-right corner of the screen.

Activating the workflow rule

The Salesforce CRM application will not trigger a workflow rule until you have manually activated it.

To activate a workflow rule, click on **Activate** on the workflow rule detail page. Click on **Deactivate** to stop a rule from triggering (or if you want to edit the time-dependent actions and time triggers associated with the rule).

View: All Workflow Rules

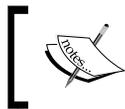
A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other | All

Action	Rule Name ↑	Description	Object	Active
Edit Del Activate	Close Date Within 7 Days	Any Open Opportunities are due to be closed within 7 days	Opportunity	<input type="checkbox"/>
Edit Del Activate	Lost Negotiation 50k		Opportunity	<input type="checkbox"/>
Edit Del Deactivate	Test		MD One	<input checked="" type="checkbox"/>
Edit Deactivate	Timer		MD One	<input checked="" type="checkbox"/>

Workflow rule considerations

Consider the following when configuring workflow rules:

- You can deactivate a workflow rule at any time. However, if you deactivate a rule that has pending actions, Salesforce.com completes these actions as long as the record that triggered the rule is not updated.
- You cannot add time-dependent workflow actions to active workflow rules. You must deactivate the workflow rule first, add the time-dependent workflow action, and then reactivate the rule.
- Workflow rules on custom objects are automatically deleted if the custom object is deleted.
- You cannot create e-mail alerts for workflow rules on activity records.
- Creating new records or updating existing records can trigger more than one rule.
- Time-dependent field updates can retrigger the reevaluation of workflow rules.
- The order in which actions are executed is not guaranteed. Field update actions are executed first, followed by other actions.



For custom objects and some standards, you can create workflow actions where a change to a detail record updates a field on the related master record.

For example, in a custom publishing application, you can create a workflow rule that sets the status of a book (the master object) to **In Process - Editor** when a chapter (the detail object) is being reviewed by the editor.

Cross-object field updates work for custom-to-custom master-detail relationships, custom-to-standard master-detail relationships, and a few standard-to-standard master-detail relationships, and they are displayed in the following way:

Identification

Name: Update Book Status

Unique Name: Update_Book_Status

Description: Update the Status of the book title whenever a chapter status is being set

Object: Chapter

Field to Update: Book Status

Field Data Type: Picklist

Specify New Field Value

Picklist Options

- The value above the current one
- The value below the current one
- A specific value: In Process - Author



If you require cross-object actions for standard objects such as updating a field on each **Opportunity Product** record when a certain field on the **Opportunity** changes, or further complex updating such as automatic record creation or deletion actions, you would need to use Visual Workflow or develop Apex triggers instead of workflow rules.

Monitoring the workflow queue

You can use the time-based workflow queue to monitor any outstanding workflow rule that has time-dependent actions. Here, you can view pending actions and cancel them if required.

To access the **Time-based Workflow** queue, navigate to **Setup | Monitor | Time-Based Workflow**, where the following page is presented:

Time-Based Workflow [Help for this Page](#)

When salesforce.com triggers a workflow rule, its time-dependent actions are placed in the workflow queue. Use the criteria below to monitor the queue.

--None--	--None--		AND
--None--	--None--		

<input type="checkbox"/>	Record Name	Object	Workflow Rule Name	Scheduled Date	Created By	Created Date
<input type="checkbox"/>	Frog	MD One	Timer	02/05/2011 23:34	Goodev, Paul	02/05/2011 22:34
<input type="checkbox"/>	Chapter 2	Chapter	Update Book Status	01/06/2011 22:38	Goodev, Paul	02/05/2011 22:38

Click on **Search** to view all the pending actions for any active time-based workflow rules, or set the filter criteria and click on **Search** to view only the pending actions that match the criteria. Set the checkbox for any listed workflow rule(s) that you wish to cancel and then click on **Delete** to terminate the selected queued workflow rule(s).

To summarize, workflow rules allow one or more actions to fire based on fields meeting certain conditions in the record (or its parent). Workflow rules are a little more complex than validation rules and take a bit more familiarity with Salesforce.com to properly execute. However, they can offer powerful business automation and can be implemented without any custom code or the work of a developer.

Approval process

An approval process in Salesforce CRM is an automated mechanism that you can set up to process the approval of records within your organization.

Working with approval processes involves the creation of a structured set of steps to enable the signoff of specified records that must be approved along with specifying which users must be set to approve it at each of the steps. Here, each step can apply to all the records within the process or specified records that have certain field values. The building of the approval processes also requires the setting up of the required actions to be taken after the record is either first submitted, approved, rejected, or recalled for approval.

Approval processes are similar to workflow rules in the sense that they can invoke the same key actions. However, there are significant differences between workflow rules and approval processes, such as:

- Workflow rules are activated when a record is saved, whereas approval processes are triggered by explicitly clicking on the **Submit for Approval** button.
- Workflow rules consist of a single step and a single action. Approval processes consist of multiple steps where a different action is taken based on whether the record is approved or rejected.
- Workflows can be modified or deleted. In approvals, some attributes cannot be modified, and approval processes must be deactivated before outstanding approvals can be deleted.
- Approval processes result in the approval history being automatically tracked, which is not applied to workflow rules.
- When an approval is initiated, the record is "locked down" and cannot be changed by someone other than the approver or system administrator until the record has completed the approval process.

Approval processes require a good understanding of your business rules and processes in order to be successfully implemented.

They must, therefore, be implemented correctly so that records are "locked down" only when necessary to avoid hindering Salesforce users who are attempting to update records.

Approval processes can, however, be a powerful mechanism to control an internal process that must be completed as part of a business process.

Example uses for approval processes are to obtain management signoffs before quotes or contracts are sent to customers or prospects for certain deals or to get authorization before users are set up in the Salesforce CRM application itself. In this example, the user activation request can be approved by the sales management and individuals from other departments, such as finance, before the user license is obtained and the user record is created.

In the same way as workflow actions, approval actions consist of e-mail alerts, tasks, field updates, and outbound messages that can be triggered by the approval process.

The following outlines the work items required to configure the approval processes:

- Provide the name of the process
- Specify the entry criteria for the records

- Specify who is going to approve
- Specify the e-mail template
- Determine the fields to be displayed on the approver page
- Specify who is going to send the approval mail

Approval process checklist

It is useful to carefully plan Salesforce CRM approval processes to help ensure a successful and smooth implementation. The following checklist specifies the required information and prerequisites needed before you start to configure your approval process:

- Determine the steps and how many levels your process has. It is often useful to map out the process using a charting tool such as Microsoft Visio.
- Decide whether users can approve requests by e-mail and set up this feature accordingly.
- Create an approval request e-mail template.
- Determine the approval request sender.
- Determine the assigned approver.
- Determine the delegated approver, if necessary.
- Decide whether your approval process needs a filter.
- Design initial submission actions.
- Determine whether users can edit records that are awaiting approval.
- Decide whether records should be auto approved or rejected.
- Determine the actions when an approval request is approved or rejected.

Approvals in Chatter

If your organization has both **Approvals** and **Chatter** enabled, you can activate Approvals in Chatter, which enables users to receive approval requests in their Chatter feeds. To enable Approvals in Chatter, navigate to **Setup | Customize | Chatter | Settings**. Click on the **Edit** button and check the **Allow Approvals** checkbox, as shown in the following screenshot:



The approval request appears as a Chatter post that you can customize by creating unique post templates and associating them with the approval processes.

Approvals in Chatter checklist

To ensure that your users will see their approval requests as Chatter posts and everything works correctly, Salesforce recommends that you follow this checklist when you are ready to activate **Approvals in Chatter** for your organization:

- Create an approval process (described in this chapter).
- Enable Chatter feed tracking for the object on which your approval process is based (this is described in *Chapter 7, Salesforce CRM Functions*).
- Create an approval post template for the object on which your approval process is based. If you want to make this the default template for all approval processes on this object, be sure to check the default checkbox when configuring your post template (described shortly in this chapter).
- Activate the **Enable Approvals in Chatter** setting.



Activating the **Enable Approvals in Chatter** setting as the last step ensures that all approval processes are properly configured to make use of it and once activated, all existing active approval processes will start generating Chatter approval posts.

Configuring approval processes

To create an approval process, follow these steps:

1. Launch the approval process wizard.
2. Specify **Name**, **Unique Name**, and **Description**.
3. Specify **Criteria** for **Entering Process**.
4. Specify **Approver Field** and **Record Editability**.
5. Select **Email Notification Template**.
6. Configure **Approval Request Page Layout**.
7. Specify **Initial Submitters**.
8. Activate the approval process.

Choosing an approval process wizard

When you click on the **Create New Approval Process** button to start creating an approval process, you are presented with these two options in which you can build the process: **Use Jump Start Wizard** or **Use Standard Setup Wizard**. The upcoming sections outline the differences between these two mechanisms.

The Jump Start Wizard option

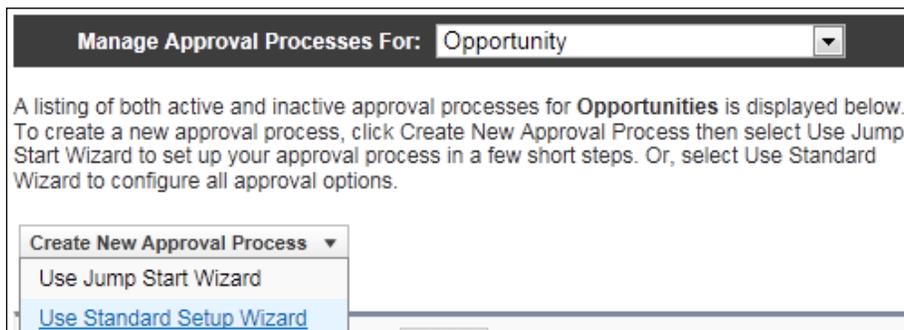
The **Jump Start Wizard** option is provided as a quick way to create simple approval processes that have a single step. To simplify the settings, the Salesforce CRM application automatically determines some default options for you with this option.

The Standard Setup Wizard option

The **Standard Setup Wizard** option enables the creation of complex approval processes and is used where multiple processing steps are required. This option provides the mechanisms to define your process and then uses a setup wizard to define each step within that process.

To create an approval process, navigate to **Setup | Create | Workflow & Approvals | Approval Processes**.

Choose the object for the new approval process, click on it, and then select **Use Standard Setup Wizard**, where we have selected **Opportunity**, as shown next:



To set the details for the approval process, do this in the **Step 1. Enter Name and Description** page (where this is step 1 of 6): enter **Process Name**, a **Unique Name**, and optionally, **Description**, and then click on **Next**

To specify the entry criteria, which is an optional step in the **Step 2. Specify Entry Criteria** page and is used to determine the records that enter the approval process, you can either choose from the formula logic or you can select certain fields, operators, and values to specify when the desired criteria are met. This is shown in the following screenshot, which is presented as step 2 of 6:

Field	Operator	Value	
Opportunity: Amount	greater than	100000	AND
Opportunity: Stage	equals	Proposal/Price Quote	AND
Opportunity: Closed	equals	False	AND
Current User: Department	equals	Sales	AND
--None--	--None--		

Buttons: Previous, Next, Cancel

In **Step 2. Specify Entry Criteria**, either enter the filter criteria for records that are to be included by this approval process or leave all the filters blank to have all records submitted within the approval process.



Restrict the approval process for specific users

If only specific users are involved in this approval process, you can specify it here. For example, if only the sales team is to submit opportunity reviews, enter this filter criteria: **Current User: Department Equals Sales.**

As shown in the preceding screenshot, in the fourth entry criteria row, **Field** is **Current User: Department**, **Operator** is **equals**, and **Value** is **Sales**.

Click on **Next** to set the **Specify Approver Field and Record Editability** options.

In this step (step 3 of 6), you would specify who the users for the approval steps in Salesforce CRM are. Here, a user field can be used to automatically route approval requests, and this field can be the **Manager** field on an individual's user record or you can create a custom hierarchical (User to User) field on the User object.

In **Step 3. Specify Approver Field and Record Editability Properties**, using the **Next Automated Approver Determined By** picklist, select a user field if you want the Salesforce CRM application to automatically assign approval requests to an approver based on the value in the user field. For example, you might want to automatically send approval requests to a user's manager, as specified in the user's **Manager** field, as shown next:

Step 3. Specify Approver Field and Record Editability Properties Step 3 of 6

When you define approval steps, you can assign approval requests to different users. One of your options is to use a user field to automatically route these requests. If you want to use this option for any of your approval steps, select a field from the picklist below. Also, when a record is in the approval process, it will always be locked-- only an administrator will be able to edit it. However, you may choose to also allow the currently assigned approver to edit the record.

Select Field Used for Automated Approval Routing

Next Automated Approver Determined By:

Use Approver Field of Opportunity Owner:

Record Editability Properties

Administrators **ONLY** can edit records during the approval process.

Administrators **OR** the currently assigned approver can edit records during the approval process.

To allow users to manually choose another user who will approve any approval requests, leave the **Next Automated Approver Determined By** field blank:

- By selecting the **Use Approver Field of Record Owner** checkbox, you can set the approval process to use the standard **Manager** field or a custom field on the record owner's user record instead of the submitting user's record.

 If you set the **Use Approver Field of Record Owner** checkbox (applying the manager of the record owner instead of the manager of the submitting user), it is applied to all subsequent steps

- Select the appropriate **Record Editability Properties** and click on **Next**.

 When a record is in the approval process, it is always locked, and only you as system administrator can edit it. However, you can specify that the currently-assigned approver can also edit the record.

- When an approval process assigns an approval request to a user, Salesforce.com automatically sends the user an approval request e-mail. This e-mail contains a web link that the user can click on to access the approval page within the Salesforce CRM application, which lets the user approve or reject the request and also enter comments.

Enable email approval response



By enabling the e-mail approval response, the user can alternatively reply to the e-mail by typing *approve*, *approved*, *yes*, *reject*, *rejected*, or *no* in the first line of the e-mail body, and then add comments in the second line. This option makes it easy to approve or reject approval requests, and is especially useful for users who access approval requests using a mobile device.

- In **Step 4. Select Notification Templates**, you can choose a custom e-mail template that can be used when notifying an approver that an approval request has been assigned to them, as shown next for the example **Approval Request** template. Alternatively, by leaving this field blank, a simple default e-mail template is used. In addition, if **Approvals in Chatter** has been enabled, you can also choose **Approval Post Template**, as shown in the following screenshot:

Step 4. Select Notification Templates
Step 4 of 6

Previous Save Next Cancel

Select the email template that will be used to notify approvers that an approval request has been assigned to them. Note that this template will be used for all steps for this process. [Create a new email template](#)

Email Template

Approval Assignment Email Template

Select the post template that will be used to notify approvers that an approval request has been assigned to them. Note that this template will be used for all steps for this process. [Create a new post template](#)

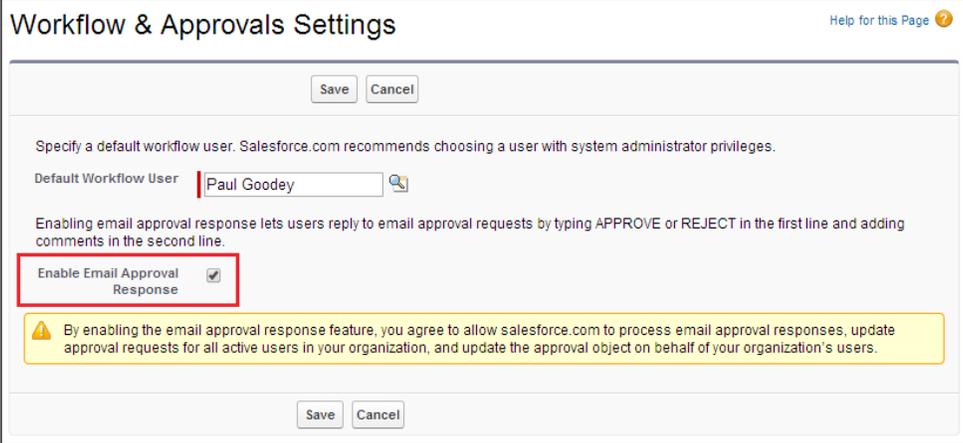
Post Template

Approval Post Template

Previous Save Next Cancel

Email Approval Response

By enabling the e-mail approval response, the user can alternatively reply to the e-mail by typing approve, approved, yes, reject, rejected, or no in the first line of the e-mail body. To enable Email Approval Response, navigate to **Setup | Create | Workflow & Approvals | Settings**. Now, check the **Enable Email Approval Response** checkbox, as shown in the following screenshot:



The screenshot shows the 'Workflow & Approvals Settings' page in Salesforce. At the top, there are 'Save' and 'Cancel' buttons. Below that, a section titled 'Specify a default workflow user. Salesforce.com recommends choosing a user with system administrator privileges.' contains a 'Default Workflow User' field with 'Paul Goodey' selected. A red box highlights the 'Enable Email Approval Response' checkbox, which is checked. Below this, a yellow warning banner contains the text: 'By enabling the email approval response feature, you agree to allow salesforce.com to process email approval responses, update approval requests for all active users in your organization, and update the approval object on behalf of your organization's users.' At the bottom of the settings area, there are again 'Save' and 'Cancel' buttons.

 If e-mail approval response is enabled and the user does not respond correctly, perhaps by misspelling the word approve or typing it on the wrong line, the Salesforce CRM application will not process the incorrect response made by the user.

Within the **Step 5. Select Fields to Display on Approval Page Layout** page, the option to configure the approval request page layout can be carried out as shown in the following example:

Step 5. Select Fields to Display on Approval Page Layout Step 5 of 6

[Previous](#) [Next](#) [Cancel](#)

The approval page is where an approver will actually approve or reject a request. Using the options below, choose the fields to display on this page.

Approval Page Fields

Available Fields		Selected Fields	
Lead Source	Add Remove	Account Name	Up Down
Main Competitor(s)		Opportunity Name	
Next Step		Opportunity Owner	
Order Number		Amount	
Primary Campaign Source		Close Date	
Private		Created By	
Quantity		Probability (%)	
Sales Tax		Stage	
Sales Tax Case			
Support Price			
Total Price			
Total Price Algebra			
Tracking Number			
Type			

Display approval history information in addition to the fields selected above.

Security Settings

Allow approvers to access the approval page only from within the salesforce.com application. (Recommended)
 Allow approvers to access the approval page from within the salesforce.com application, or externally from a wireless-enabled mobile device.

[Click here to view an example](#)

The approval page is where an approver approves or rejects a request, and it is in **Step 5. Select Fields to Display on Approval Page Layout** of configuring the approval process where you can carry out the following:

1. Select and sort the fields you want to display on the approval request page.

2. Select **Display approval history information** in addition to the field selected previously to include the **Approval History** related list that displays the **Date, Status, Assigned To, Actual Approver, Comments, and Overall Status** columns on the resulting approval request page, as shown in the following screenshot:

The screenshot displays the Salesforce interface for an Approval Request. At the top, it shows 'Approval Request' and 'Opportunity: 500k'. Below this, there are fields for Opportunity Name (500k), Opportunity Owner (Trevor Howard), Account Name, Amount (\$600,000.00), Close Date (27/09/2011), and Created By (Trevor Howard). A comments box is also present. At the bottom, there are 'Approve', 'Reject', and 'Cancel' buttons.

The 'Approval History' section is highlighted with a red box and contains the following table:

Date	Status	Assigned To	Actual Approver	Comments	Overall Status
Step: Step 1 (Pending for first approval)					
27/09/2011 21:07	Pending	Paul Goodey	Paul Goodey		Pending
Approval Request Submitted					
27/09/2011 21:07	Submitted	Trevor Howard	Trevor Howard		

3. To specify how approvers can access an approval page, select either **Allow approvers to access the approval page only from within the application. (Recommended)** or **Allow approvers to access the approval page from within the salesforce.com application, or externally from a wireless-enabled mobile device**, and then click on **Next** (as shown previously in the step 5 screenshot).

4. Now, specify **Initial Submitters**, as shown in the following screenshot:

5. Specify which users are allowed to submit records for approval.
6. Optionally, select **Add the Approval History related list to all [object name] page layouts** (as shown for the Opportunity object-related approval). This will automatically update all the page layouts for this object and include a related list that allows users to view and submit approval requests.
7. Optionally, select **Allow submitters to recall approval requests** to give submitters the option to withdraw their approval requests.

When the **Allow submitters to recall approval requests** option is selected, the **Recall Approval Request** button in the **Approval History** related list is visible to the users who have submitted the record, as well as to you as the system administrator.

When a user clicks on **Recall Approval Request**, the pending approval request for the record is withdrawn and the recall action is run.

This option is required for scenarios where changes occur to the record while waiting for the approval signoff. For example, an opportunity might be set to lost or the amount might be lowered below the approval threshold after having submitted it for approval.

Now, click on **Save**, then click on **Next**, and then finally, click on the **Activate** button next to the process.

 You will be unable to activate the process until you have created at least one approval step for the approval process. 

Creating approval steps

Approval steps in Salesforce CRM set the flow of the record approval process that associates the participating users at each chain of approval. For each approval step, we set *who* can approve requests for the records, *what* the record must contain to meet the criteria, and *why* the record should be allowed to be approved (in the case of a delegated approver).

In addition, the very first approval step in a process also specifies the action required whenever the record fails to reach that step. Later steps then require you to set the action to be taken whenever an approver rejects the request.

To create an approval step, navigate to **Setup | Create | Workflow & Approvals | Approval Processes** and select the name of the approval process, and then carry out the following:

- Click on the **New Approval Step** button from the **Approval Steps** related list section

 For both Enterprise and Unlimited Editions, there is a limit of 30 steps per process 

- Enter the **Name**, a **Unique Name**, and an optional **Description** fields for the approval step

- Enter a step number that positions the step in relation to any other step in the approval process, as shown next, and click on **Next**:

Step 1. Enter Name and Description Step 1 of 3

[Next](#) [Cancel](#)

Enter a name, description, and step number for your new approval step.

Enter Name and Description ! = Required Information

Approval Process Name Deals > 100k Review

Name

Unique Name [i](#)

Description

Step Number

[Next](#) [Cancel](#)

On this page, specify that either all records should enter this step or only records with certain attributes should enter this step, as shown in the following screenshot:

Step 2. Specify Step Criteria Step 2 of 3

[Previous](#) [Next](#) [Cancel](#)

Specify whether a record must meet certain criteria before entering this approval step. If these criteria are not met, the approval process can skip to the next step, if one exists. [Learn more](#)

Specify Step Criteria

All records should enter this step.

Enter this step if the following , else :

[Previous](#) [Next](#) [Cancel](#)

If you specified the filter criteria or entered a formula, you can choose what should happen to records that do not meet the criteria or if the formula returns `False`, where the options are:

- **Approve record:** This automatically approves the request and performs all final approval actions.

- **Reject record:** This automatically rejects the request and performs all final rejection actions. This option is only available for the first step in the approval process.

Now, click on **Next** to display the **Step 3. Select Assigned Approver** page, where you specify the user who should approve records that enter this step and optionally, choose whether the approver's delegate is also allowed to approve these requests, as shown next:

Previous Approval Step Information	
Step Number:	1
Name:	Manager Approval
Criteria:	
Assign To:	Manually Chosen

The options are:

- **Let the submitter choose the approver manually**, which prompts the user to manually select the next approver
- **Automatically assign using the user field selected earlier**, which assigns the approval request to the user in the custom field that is displayed next to this option (where this custom field was selected during the earlier configuration of the approval process, which, in the preceding screenshot, is **Manager**)

- **Automatically assign to approver(s)**, which allows you to assign the approval request to one or more users or related users, as shown next:

If you specify multiple approvers in the **Automatically assign to approver(s)** option, choose one of the following options:

- **Approve or reject based on the FIRST response**, whereby the first response to the approval request determines whether the record is approved or rejected.
- **Require UNANIMOUS approval from all selected approvers**, whereby the record is only approved if all of the approvers approve the request. If any of the approvers reject the request, then the approval request is rejected.

Also on this page is the option to specify **The approver's delegate may also approve this request**, where the delegate user is set in the **Delegated Approver** field on the assigned approver's user page.

 Delegated approvers cannot reassign approval requests, and they are only permitted to approve or reject approval requests. 

If this is not the first step in the approval process, you must specify what will happen if the approver rejects a request in this step, as shown in the following example, where the options are as follows:

- Perform all rejection actions for this step and all final rejection actions (Final Rejection).
- Perform only the rejection actions for this step and send the approval request back to the most recent approver (go back one step).

Now, click on **Save** and specify any workflow action you want to set within this step using the following options:

- Yes, I'd like to create a new approval action for this step now
- Yes, I'd like to create a new rejection action for this step now
- No, I'll do this later. Take me to the approval process detail page to review what I've just created

Finally, click on **Go!** to complete the approval process.

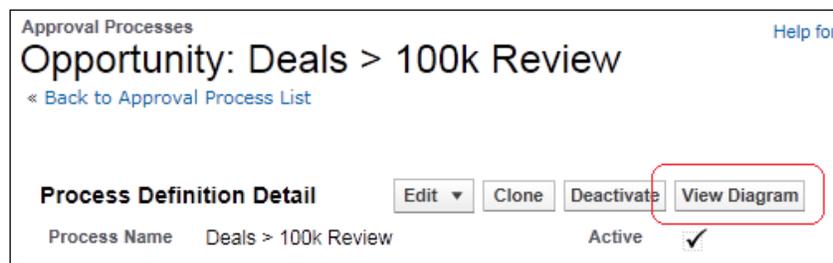
Measuring and refining

Although you will need to plan for the successful implementation of approval processes, it is highly likely that they will need to change over time. This could be due to a change of business processing or the refinement of the process within the Salesforce CRM application.

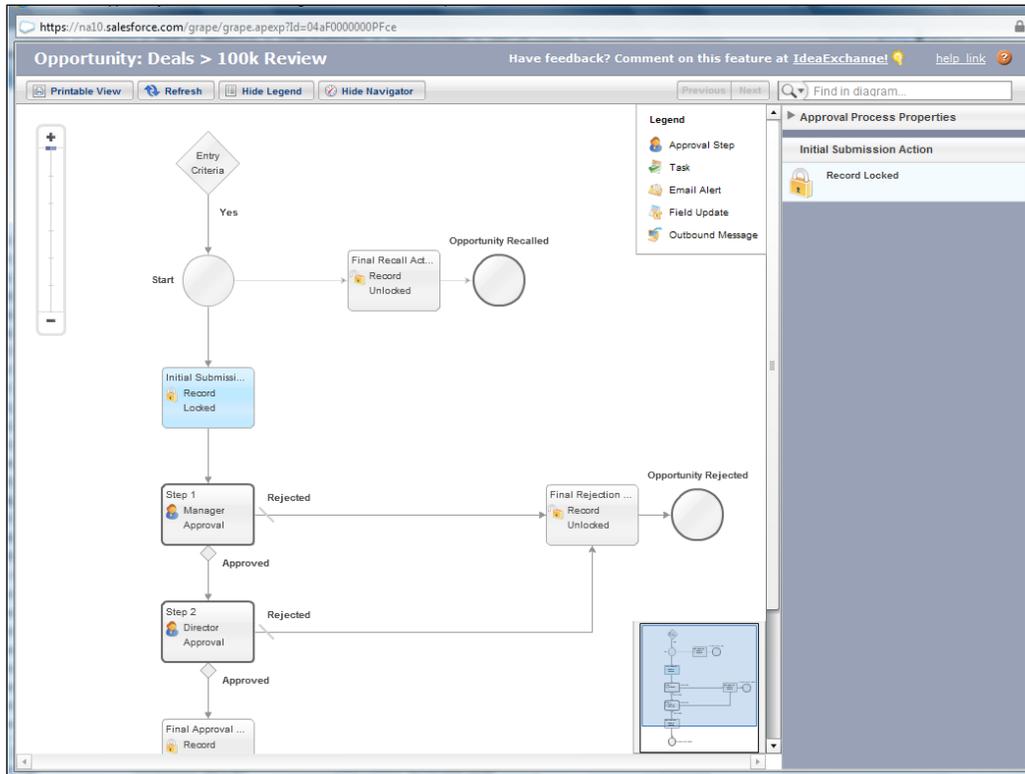
It is, therefore, a good idea to create analytics to help measure and verify that the approval process is operating successfully. You could, for example, produce reports and dashboards to measure how long approvals take through the process and identify any areas of the process that are not working as expected and refine them accordingly.

The process visualizer

The process visualizer provides a read-only representation of your saved approval processes. It can be accessed by clicking on the **View Diagram** button from within the saved approval process, as shown in the following screenshot:



The following screenshot is displayed for the simple two-step approval process to review opportunity deals that are greater than 100 K:



With the process visualizer, you can also print an annotated version of the approval process, where numbers appearing on the diagram correspond to details in a table that are included in the printable view.

Having the process set out diagrammatically can help in the understanding of:

- The steps necessary for a record to be approved
- The designated approvers for each step
- The criteria used to trigger the approval process
- The specific actions taken when a record is approved, rejected, recalled, or first submitted for approval

In summary, approval processes can be a powerful tool to monitor an internal process that must be completed prior to moving forward with the business activities. They also provide great visibility into the timeliness of business process. Here, you can use approvals to capture the length of time it takes to get expenses, say, approved, which can then help put measures to improve organizational processes in place.

Visual Workflow

Visual Workflow allows you to build collections of screens, which are known as **Flows**, to guide users through the process of collecting and updating data.

Working with flows involves the creation of a structured set of steps to enable users to complete specified business processes. These business processes could be, for example, call scripts for a customer support team, questionnaires and surveys for customers or employee interactions, or processes to handle incoming sales enquiries for your organization.

Use cases for flows are many and varied, and the **Visual Workflow** options allow you to create screens that collect and display information, create and update Salesforce records, and carry out logic based on input from users – all from within the drag-and-drop **Visual Workflow** user interface.

Configuring Visual Workflow

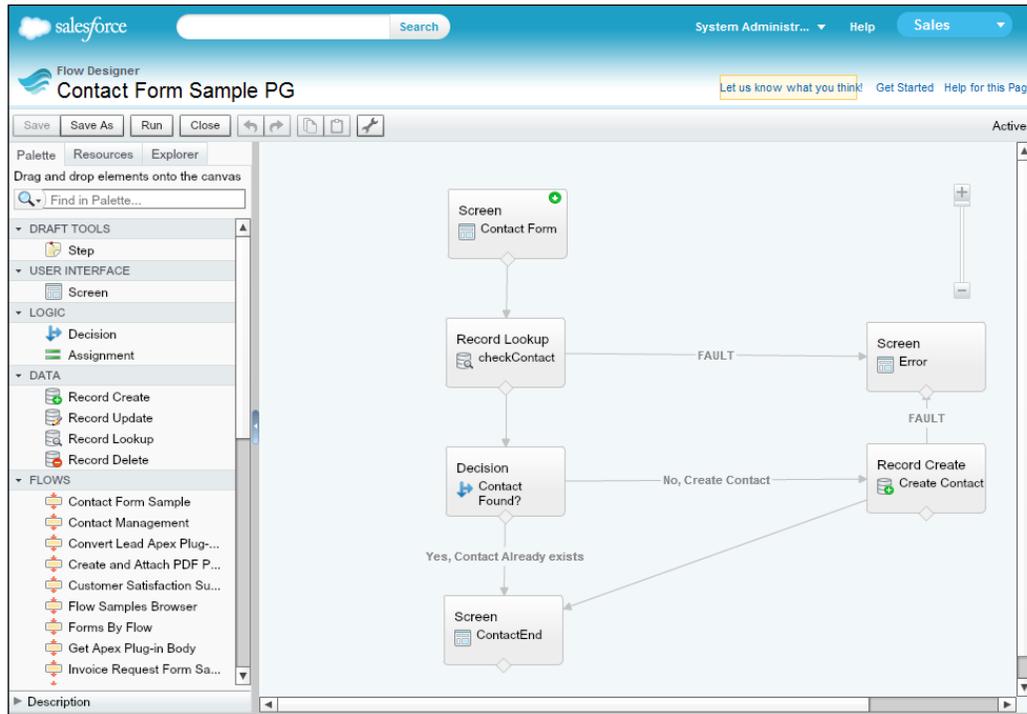
Working with **Visual Workflow** involves these three concepts: flow design, flow management, and runtime. Flow design and management is carried out using **Flow Designer**, which is part of the Salesforce CRM setup options. Once the flow has been designed and created, you can then manage it by setting properties, activating, deactivating, deleting, or running it – all from within the Salesforce CRM application. Finally, users can then run activated flows, again from within Salesforce. Here, you can configure the flow to be run from a custom button, link or tab, from within a Visualforce page, or directly using the Salesforce flow URL.

Flow Designer

Visual Workflow and the **Flow Designer** are accessed by navigating to **Setup | Create | Workflow & Approvals | Flows**.

To create and manage flows in **Cloud Flow Designer**, click on **New Flow** or edit an existing flow.

Flow Designer has a drag-and-drop user interface that lets you configure screens and define branching logic without writing any code, as shown in the following screenshot:



The **Flow Designer** user interface has the following features and functional sections:

- The buttons in the button bar section let you save, close, undo or redo, view properties of, or run the flow.
- The status indicator on the right-hand side of the bar indicates that the flow is active, saved, or whether it has any warnings or errors.
- The **Palette** tab lists all the element types available for the flow. Here, you can drag and drop elements from the palette onto the canvas to configure them.
- The **Resources** tab lets you create new resources for the flow, such as variables, constants, formulas, and so on. Once created, the new resources will appear in the **Explorer** tab.

- The **Explorer** tab is a library of all the elements and resources that have been created for the flow.
- The **Description** pane is used to show details for the selected item when you click on them in the **Palette**, **Resources**, and **Explorer** tabs.
- Canvas is where your flow is built. Here, elements are added from the palette then configured and connected to create a structured set of steps for the flow.

Flow Designer considerations

It is useful to have a general idea of how the flow will be built in Salesforce CRM to help ensure a successful and smooth implementation. Take into account the following considerations before you start to configure your flow:

- Use a **Step** element as a placeholder if you are unsure of exactly which element you need at a given point in the flow. This allows for iterative building of the flow, allowing you to further refine it as your understanding of the process develops.
- To select multiple elements, either click and select an area around the multiple elements to highlight them or use control-click to select individual elements. You can then press the *Delete* button on your keyboard to delete them all at once.
- To view the description or details for an item in the **Palette**, **Resources**, or **Explorer** tab, click on the item and look at the caption in the **Description** pane.

Now, let's look at the **Palette**, **Resources**, and **Explorer** tabs in more detail.

The Palette tab

The **Palette** tab lists the element types that are available for the flow. Here, you can drag and drop elements from the **Palette** tab onto the main canvas. Once created, the new elements appear in the **Explorer** tab.

Elements are the key aspects of building flows. They represent an action such as collecting or displaying information from users, or querying, creating, updating, and deleting data records. Elements can be connected to create a structured set of steps consisting of screens, inputs, outputs, and branch logic through which users are guided.

Elements

The following elements are available in the **Cloud Flow Designer**:

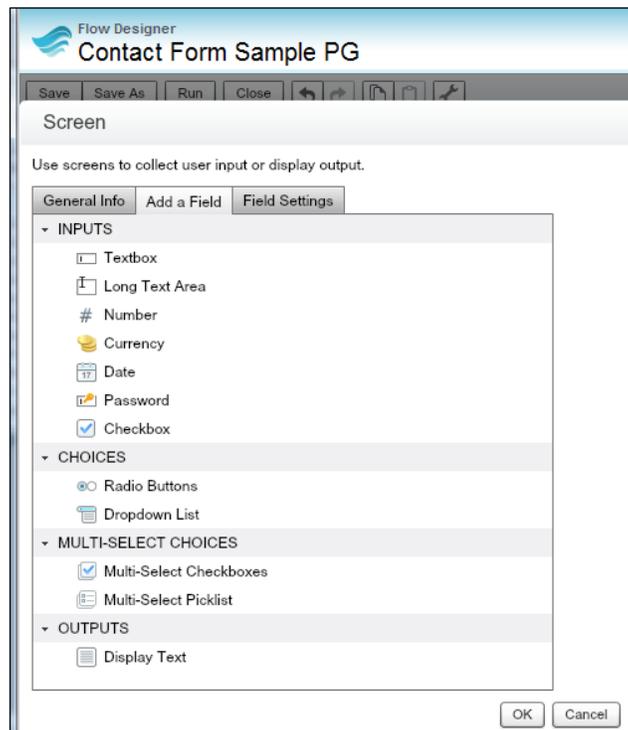
- **Step**: This is a placeholder element that you can use to quickly sketch out a flow and then convert into a **Screen** element
- **Screen**: This is a user-facing screen that can be used to collect input or display output
- **Decision**: This uses conditions to determine where to route users next in the flow
- **Assignment**: This is used to set or change the value of variables
- **Record Create**: This is used to create a new record and insert resource values into its fields
- **Record Update**: This is used to update one or multiple records' fields with resource values
- **Record Lookup**: This is used to find a record and assign its fields to variables
- **Record Delete**: This is used to delete records that match certain criteria
- **Subflows**: This is used for nested flow
- **Apex Plug-In**: This uses logic built-in apex code via apex classes or Appexchange packages

Using the Step element

From within the **DRAFT TOOLS** section, the **Step** element can be used to diagram the flow of your business process. The **Step** element is simply a placeholder, and it cannot be used in an active flow. Instead, it is used to quickly diagram the series of steps for the business process that is being built. Once you have each step in place and you want to get the flow activated, you can hover over the **Step** element and click on the **Convert Element** (double-arrow icon) option. This then enables the conversion of the draft **Step** element into a **Screen** element, which is the building block for every flow.

Using the Screen element

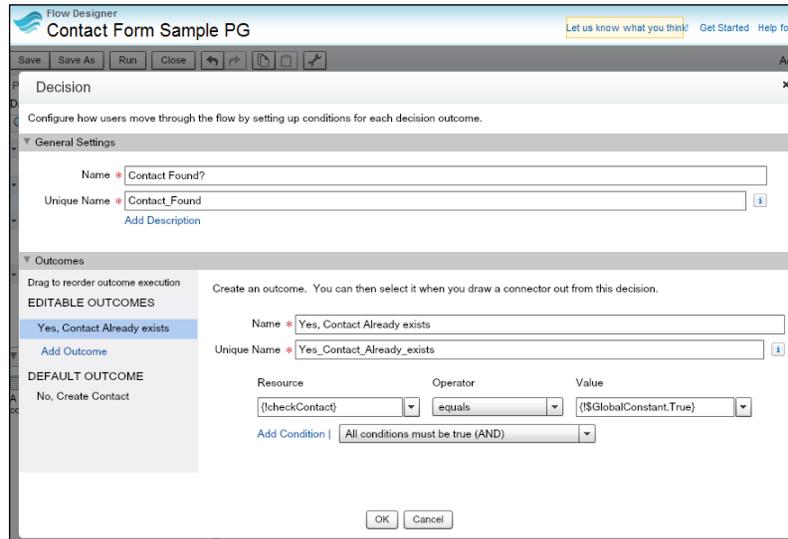
The **Screen** element can be created using the **Convert Element** option on a **Step** element, as described previously, or it can be created from within the **USER INTERFACE** section. The screen elements contain the series of windows that the user will see along with the built-in navigational buttons (for previous and next). The **Screen** element has various options for user interaction, and it is from the **Add a Field** tab on the **Edit** screen that you can select from these sections: **INPUTS**, **CHOICES**, **MULTI-SELECT CHOICES**, or **OUTPUTS**, as shown in the following screenshot:



Using the Decision element

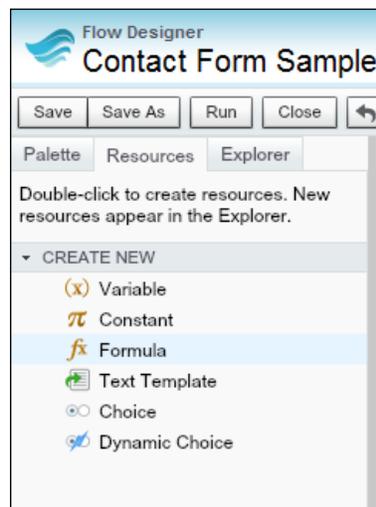
After interacting with a **Screen** element, the user might then need to be directed along a specified path in the flow depending on how they responded. The **Decision** element under the **LOGIC** section allows you to configure how users move through the flow by setting up conditions for each decision outcome.

The **Decision** element is used to navigate the flow and route the user to the next screen or interaction based on their response within the previous **Screen** element. Within the **Decision** element, you can create **Editable Outcome** for each of the responses, as shown in the following screenshot:



The Resources tab

The **Resources** tab lets you create new resources for the flow, such as variables, constants, formulas, and so on, as shown in the following screenshot:

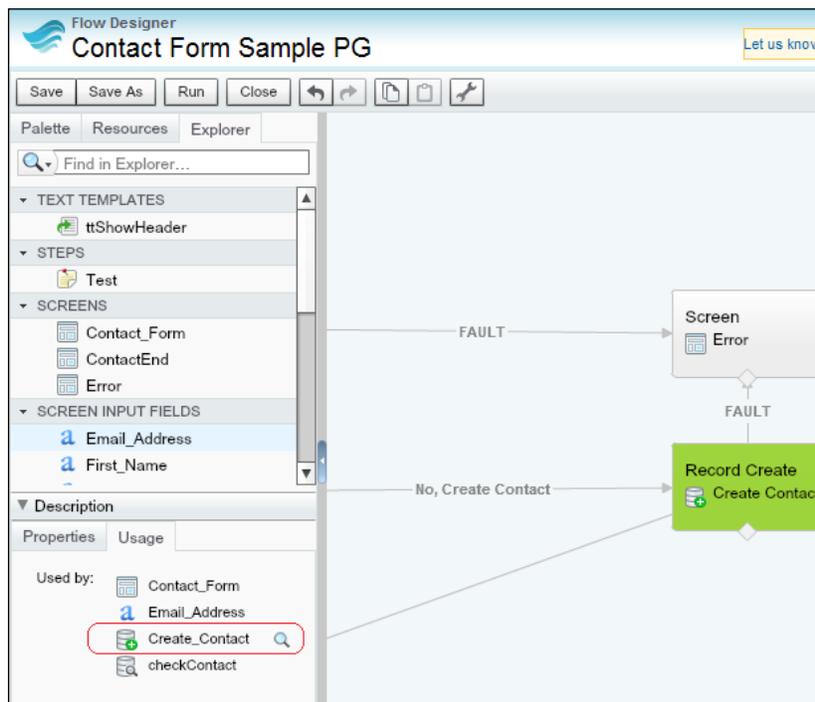


After new resources have been created or items from the **Palette** tab have been added to a flow, they appear in the **Explorer** tab.

The Explorer tab

By double-clicking on items in the **Explorer** tab, you can access the edit page for them. You can single-click on an item to view details for the item in the **Description** pane. When viewing items within the **Explorer** tab, the **Description** pane includes two subtabs:

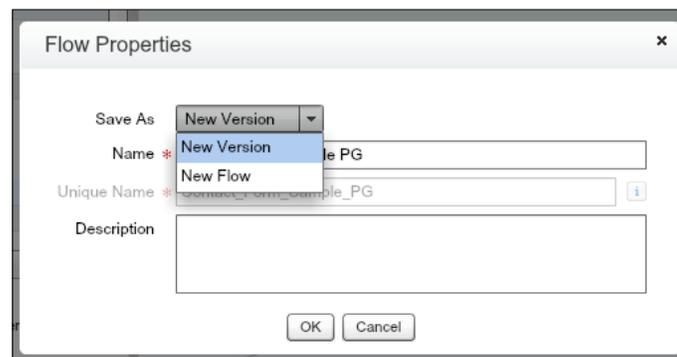
- **Properties:** This shows you information about the element or resource you have selected, such as its label, unique name, description, and data type.
- **Usage:** This lists the elements where the selected item is used. To see where one of the listed elements is located on the canvas, hover over it and click on the magnify icon, as shown in the following screenshot:



Saving a flow

After you have created a flow in **Flow Designer**, the options for saving are:

- **Initial save:** When saving for the first time, a dialog box appears. Enter a flow name, unique name, and description. Once the flow has been saved, the unique name cannot be modified.
- **Quick save:** Having saved the flow, the **Save** button works as a quick-save, overwriting your previous work. Note that the **Save** button is unavailable when editing active flows. Here, you must use **Save As** to save the changes as either a new flow or a new version of the flow.
- **Save as:** Once you have saved the flow, this button is available with two options: **Save As New Flow**, which opens a dialog box where you can input new details and save as an entirely new flow, or **Save As New Version**, which saves the flow as a new version of the current flow (as shown in the following screenshot). This option is useful if you are about to make changes to a flow and want to keep the old flow as a backup just in case you need to retrieve it later:



Saving a flow considerations

Consider the following when saving a flow or flow version:



- If you have the flow detail page open in one browser tab, then open a flow version in a new browser tab to edit it. After saving and closing it, you must refresh the first flow detail page before you can successfully run the flow version you just edited.
- If you have changed the flow properties and the save operation fails for some reason, the flow properties do not revert to the previous values.
- Each flow can have up to 50 versions.
- You can update the flow name and description when you save a new version but not the unique name.

Flow runtime considerations

Flows can be run directly from the flow URL or from a custom web tab, link, or button pointing to the flow URL.

Depending on how you wish to set up flows for your users, you have the following specific options:

- Add the flow as a custom link on a detail page
- Add it as a custom button on a detail page
- Add it as a link on the Home page
- Add it as a flow within a Visualforce page

In order to run flows, users require either one of the following permissions to be set up:

- **Run Flows** profile permission
- Force.com's **Flow User** field enabled on the user detail page

Consider the following when running flows:

- Do not use the browser's back or forward buttons to navigate through a flow. This might result in inconsistent data between the flow and Salesforce.
- A single flow can have up to 50 different versions. When users run a flow, they see the active version, which might not necessarily be the latest version.

Summary

In this chapter, we looked at the automation features within the Salesforce CRM application through the use of workflow rules and approval processes. We walked through the configuration of these functions and discovered how they can be used to automate and streamline the key business processes for your organization. We also looked at Visual Workflow and learned how flows can be used to build screens that guide users through the process of collecting and updating data.

By leveraging workflow automation, your users benefit from greater control over routine activities and the elimination of redundant tasks.

In the next chapter, we will look at the functional areas of Salesforce CRM and the facilities for sales and marketing automation, service and support, and enterprise social networking.

7

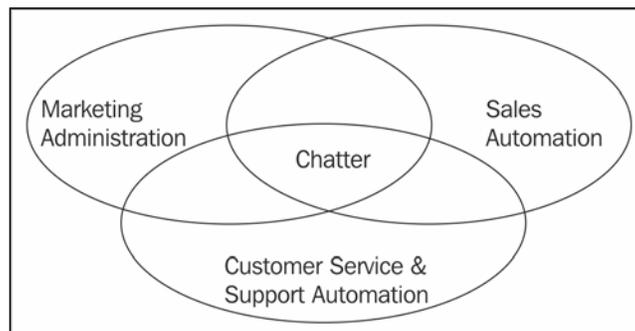
Salesforce CRM Functions

This chapter gives you an overview of the functional areas within Salesforce CRM, where we will look at the process from the campaign to the customer and beyond. Within the functional areas, there are various touch points where the business teams concerned with marketing, sales, and customer service have to agree on roles and responsibilities for aspects of the business processes. We will now look at each of the following core Salesforce CRM functions:

- Marketing administration
- Sales automation
- Customer service and support automation
- Enterprise social networking and collaboration with Salesforce Chatter

A functional overview of Salesforce CRM

The Salesforce CRM functions are related to each other and, as mentioned previously, have crossover areas that can be represented as shown in the following diagram:



Marketing administration

Marketing administration is available in Salesforce CRM under the application suite known as the **Marketing Cloud**.

The core functionality enables organizations to manage marketing campaigns from initiation to lead development in conjunction with the sales team. The features in the marketing suite can help measure the effectiveness of each campaign by analyzing the leads and opportunities generated as a result of specific marketing activities.

Salesforce automation

Salesforce automation is the core feature set within Salesforce CRM and is used to manage the sales process and activities. It enables salespeople to automate manual and repetitive tasks and provides them with information related to existing and prospective customers. In Salesforce CRM, Salesforce automation is known as the **Sales Cloud** and helps salespeople manage sales activities, leads and contact records, opportunities, quotes, and forecasts.

Customer service and support automation

Customer service and support automation within Salesforce CRM is known as the **Service Cloud** and allows support teams to automate and manage requests for service and support by existing customers. Using the Service Cloud features, organizations can handle customer requests such as the return of faulty goods or repairs, complaints, or provide advice about products and services.

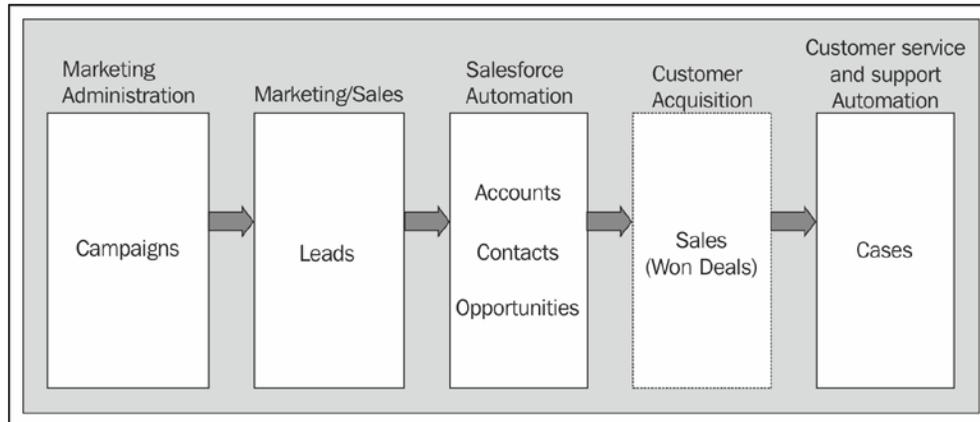
Associated with the functional areas, described previously, are features and mechanisms that help users and customers collaborate and share information, this is known as enterprise social networking.

Enterprise social networking with Salesforce Chatter

Enterprise social network capabilities within Salesforce CRM enable organizations to connect with people and securely share business information in real time. Social networking within an enterprise serves to connect both employees and customers and enables business collaboration. In Salesforce CRM, the enterprise social network suite is known as **Salesforce Chatter**.

The Salesforce CRM record life cycle

The capabilities of Salesforce CRM provide for the processing of campaigns through to customer acquisition and beyond, as shown in the following diagram:



At the start of the process, it is the responsibility of the marketing team to develop suitable campaigns in order to generate leads. Campaign management is carried out using the *Marketing Administration* tools and has links to the lead and also any opportunities that have been influenced by the campaign.

When validated, leads are converted to accounts, contacts, and opportunities. This can be the responsibility of either the marketing or sales teams and requires that a suitable sales process to have been agreed upon. In Salesforce CRM, an account is the company or organization and a contact is an individual associated with an account.

Opportunities can either be generated from lead conversion or can be entered directly by the sales team. As described earlier in this book, the structure of Salesforce requires account ownership should be established; this looks at inherited ownership of the opportunity. Account ownership is usually the responsibility of the sales team.

Opportunities in a CRM system are usually processed using an agreed sales process with predefined sales stages. Sales stages typically advance to a final stage of either *closed/lost* or *closed/won*, where a *closed/won* opportunity represents a successful sale. Successful sales opportunity information should then be logged in the organization's financial system.

Upon acceptance of the deal by the finance team (and perhaps the delivery of the goods or service), the post-customer acquisition process is then enabled where the account and contact can be recognized as a customer. Here, the customer relationships concerning incidents and requests are managed by escalating cases within the customer services and support automation suite.

Marketing administration

Marketing administration in Salesforce CRM provides closed-loop marketing automation from within the marketing app that can be accessed from **App Menu** in the top-right corner of the Salesforce CRM screen.

Marketing administration enables integrated marketing functions such as campaign management, lead management, reporting and analysis, response tracking, and campaign effectiveness, and it allows users from various departments to centrally access marketing activity.

By default, the marketing administration features provide some level of read-only access to all users. However, to create, edit, and delete campaigns and carry out advanced campaign and lead management functions, users must have the **Marketing User** license set on their user record, as shown next:

The screenshot shows the 'User Edit' page for Paul Goodey. The 'General Information' section includes fields for First Name (Paul), Last Name (Goodey), Alias (pgood), Email (paul.goodey@widgetsxyz), Username (paul.goodey@widgetsxyz), and Community Nickname (admin). The 'Role' is set to CEO, User License to Salesforce, and Profile to System Admin Custom. The 'Marketing User' checkbox is checked and highlighted with a red box. Other checkboxes include Active, Offline User, Knowledge User, Force.com Flow User, Service Cloud User, and Mobile User, all of which are also checked.

 The **Marketing User** license is available as the standard for organizations with the Enterprise or Unlimited editions and can be applied to any active user.

The following key features are available within Salesforce CRM marketing administration:

- Campaign management
- Lead management

Campaign management

With targeted marketing campaigns, companies can build market awareness, generate leads, and learn from their campaign results to fine-tune offers to various customer segments.

The campaign management feature in Salesforce CRM allows your users to manage and track outbound marketing activities. These can be direct mail, road shows, online or print advertising, e-mail, or other types of marketing initiatives.

Some CRM systems have sales and marketing features separated, requiring marketing and sales users to log on to two separate modules; however, with Salesforce CRM, a dedicated **Campaign** tab is provided to enable marketing and sales users to work together within a single system.

Within the **Campaign** tab, the marketing team can access sales information for their campaigns and the sales team can have visibility into the marketing activities that affect their accounts, contacts, and leads. Campaigns can also be organized into hierarchies for flexible analysis of related marketing initiatives.

By integrating the marketing and sales effort for campaign and lead management activities, far greater collaboration can be achieved.

Essential success criteria for campaigns can be captured and used to further develop the definition of marketing targets. This enables marketing departments to become more accountable and better demonstrate their marketing **Return On Investment (ROI)**.

The steps to consider when managing and working with campaigns in Salesforce CRM are as follows:

- Campaign planning
- Campaign setup
- Campaign creation
- Campaign execution
- Campaign responses
- Campaign effectiveness

Campaign planning

Before starting to build and run campaigns, it is useful to have an overall plan of the goals and objectives of the campaign, such as the core processes and the type of campaign—mass marketing e-mails, hosting a conference, sending direct mail, and so on.

The targets for the campaign need to be identified as well as whether they should be existing customers, existing leads, or new leads. With existing leads, you can use lead scoring and lead status to facilitate customer segmentation. For example, a series of archived status definitions could be used, such as *No Interest*, *Future Interest*, *Nurture*, and so on.

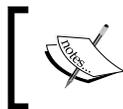
Consider how you need to analyze and report on campaigns.

It is worth considering this at an early stage and look to create custom campaign fields. You can customize campaigns so that you can improve the targeting and customer segmentation and help to compare and analyze which types of campaigns are the most effective for your sales and marketing teams.

Your marketing team might also want to target new leads through the use of third-party lists. These third-party lists of suspects, prospects, or leads can be flagged in Salesforce with a specific indicator. By flagging with a different record type, or assigning to a different queue, these lead records can be kept apart from existing prospects so that any prequalification or de-duplicating can be done before they are available for use in campaigns.

Campaign setup

When setting up campaign management, you should identify who should have access to campaigns.



To create, edit, and delete campaigns and configure advanced campaign setup, users must have the **Marketing User** license checked on their user record.

By default, all users have read-only access to campaigns but, to create, edit, or delete campaigns, users must have the **Create** permission on their profile, as shown:

Standard Object Permissions						
The permissions defined here control access at the object level. Access to individual records within that object type is controlled by the sharing model. Set access levels based on the functional requirements for the profile. For example, create different groups of permissions for individual contributors, managers, and administrators. How do I choose?						
	Basic Access				Data Administration	
	Read	Create	Edit	Delete	View All	Modify All
Accounts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assets	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cases	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contacts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contracts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Documents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leads	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Price Books	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Products	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quotes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solutions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

When starting new types of campaigns, your marketing and sales teams should collaborate to agree on the customer information that is to be captured. Here, you can use the standard fields for both the **Campaign** and **Campaign Member** objects or create new custom fields, as appropriate.

Standard campaign fields

The following key standard fields are available on the **Campaign** object:

Field	Type	Description
Campaign Name	Text	This is the name of the marketing campaign. A relevant name should be chosen that is useful for both the marketing and sales teams, for example, Webinar Widgets EMEA FY12Q1.
Type	Picklist	This field is used for the type of campaign. Salesforce provides this standard list: Conference, Webinar, Trade Show, Public Relations, Partners, Referral Program, Advertisement, Banner Ads, Direct Mail, E-mail, Telemarketing, and Other.
Status	Picklist	This field is used for the current status of a campaign. Salesforce provides this standard list: Planned, In Progress, Completed, and Aborted.
Start Date	Date	This field is used for the date on which a campaign starts.
End Date	Date	This field is used for the date on which a campaign ends.

Field	Type	Description
Expected Revenue	Currency	This field is used to set the amount of revenue the campaign will generate.
Budgeted Cost	Currency	This field is used to set the amount of money that has been budgeted for the running of the campaign.
Actual Cost	Currency	This field is used to set the amount of money that the campaign actually costs to run. This field must be recorded to calculate ROI. Note that the ROI is calculated as the net gain using this expression: $((Total Value Won Opportunities - Actual Cost) / Actual Cost) * 100$.
Expected Response (%)	Percentage	This field is used to set the expected response rate for the campaign.
Num Sent	Number	This field is used to set the number of individuals targeted in the campaign. For example, if a webinar campaign involved sending out invites to 25,000 people, then 25000 would be entered as the number sent.
Active	Checkbox	This field is used to set the campaign to either active or not active. Note that, if the campaign is not active, it will not appear in reports or campaign selection picklists (found on lead, contact, opportunity edit pages, and related lists).
Description	Text (long-text area)	This field allows up to 32,000 characters to be entered to add detailed information for the campaign.
Total Leads	Number	This field is the sum of all leads linked to this campaign.
Total Contacts	Number	This field is the sum of all contacts linked to this campaign.
Converted Leads	Number	This field is the sum of all leads linked to this campaign that have been converted.
Total Responses	Number	This field is the sum of all campaign members that are linked to this campaign and have their member status set to Responded.
Total Value Opportunities	Currency	This field is the total amount of all opportunities linked to this campaign.
Total Value Won Opportunities	Currency	This field is the total amount of all closed/won opportunities linked to this campaign.

The complete set of fields is shown next, where the picklist values can be adapted to suit your organization. They are accessed by navigating to **Setup | Customize | Campaigns | Fields**.

Campaign Fields Help for this Page ?				
This page allows you to specify the fields that can appear on the Campaign page. You can create up to 500 Campaign custom fields.				
Note that deleting a custom field will delete any filters that use the custom field. It may also change the result of Assignment or Escalation Rules that rely on the custom field data.				
Campaign Standard Fields Campaign Standard Fields Help ?				
Action	Field Label	Field Name	Data Type	Controlling Field
Edit	Active	IsActive	Checkbox	
Edit	Actual Cost	ActualCost	Currency(18, 0)	
Edit	Budgeted Cost	BudgetedCost	Currency(18, 0)	
Edit	Campaign Member Type	CampaignMemberRecordType	Lookup(Record Type)	
Edit	Campaign Name	Name	Text(80)	
Edit	Campaign Owner	Owner	Lookup(User)	
Edit	Converted Leads	NumberOfConvertedLeads	Number(9, 0)	
	Created By	CreatedBy	Lookup(User)	
Edit	Description	Description	Long Text Area(32000)	
Edit	End Date	EndDate	Date	
Edit	Expected Response (%)	ExpectedResponse	Percent(8, 2)	
Edit	Expected Revenue	ExpectedRevenue	Currency(18, 0)	
	Last Modified By	LastModifiedBy	Lookup(User)	
Edit	Num Sent	NumberSent	Number(18, 0)	
Edit	Num Total Opportunities	NumberOfOpportunities	Number(9, 0)	
Edit	Num Won Opportunities	NumberOfWonOpportunities	Number(9, 0)	
Edit	Parent Campaign	Parent	Lookup(Campaign)	
Edit	Start Date	StartDate	Date	
Replace Edit	Status	Status	Picklist	
Edit	Total Actual Cost in Hierarchy	HierarchyActualCost	Currency(18, 0)	
Edit	Total Budgeted Cost in Hierarchy	HierarchyBudgetedCost	Currency(18, 0)	
Edit	Total Contacts	NumberOfContacts	Number(9, 0)	
Edit	Total Contacts in Hierarchy	HierarchyNumberOfContacts	Number(9, 0)	
Edit	Total Converted Leads in Hierarchy	HierarchyNumberOfConvertedLeads	Number(9, 0)	
Edit	Total Expected Revenue in Hierarchy	HierarchyExpectedRevenue	Currency(18, 0)	
Edit	Total Leads	NumberOfLeads	Number(9, 0)	
Edit	Total Leads in Hierarchy	HierarchyNumberOfLeads	Number(9, 0)	
Edit	Total Num Sent in Hierarchy	HierarchyNumberSent	Number(18, 0)	
Edit	Total Opportunities in Hierarchy	HierarchyNumberOfOpportunities	Number(9, 0)	
Edit	Total Responses	NumberOfResponses	Number(9, 0)	
Edit	Total Responses in Hierarchy	HierarchyNumberOfResponses	Number(9, 0)	
Edit	Total Value Opportunities	AmountAllOpportunities	Currency(18, 0)	
Edit	Total Value Opportunities in Hierarchy	HierarchyAmountAllOpportunities	Currency(18, 0)	
Edit	Total Value Won Opportunities	AmountWonOpportunities	Currency(18, 0)	
Edit	Total Value Won Opportunities in Hierarchy	HierarchyAmountWonOpportunities	Currency(18, 0)	
Edit	Total Won Opportunities in Hierarchy	HierarchyNumberOfWonOpportunities	Number(9, 0)	
Replace Edit	Type	Type	Picklist	

Standard campaign member fields

The following key standard fields are available on the **Campaign Member** object:

Field	Type	Description
Campaign	Lookup (Campaign)	This field is the campaign name. It is set using a link to the campaign record.
Contact	Lookup (Contact)	This field is the contact name. It is set using a link to the contact record. Note that either Contact is set or Lead is set (not both).
Lead	Lookup (Lead)	This field is the lead name. It is set using a link to the lead record. Note that either Contact is set or Lead is set (not both).
Status	Picklist	This is the status of the campaign member as part of the linked campaign. Salesforce provides these standard values: <i>Planned, Sent, Received, and Responded</i> . Every campaign has a specific outcome that can be captured on the member status and response fields. With well-defined member status and response values, reporting can be carried out in a much easier manner.

The complete set of fields is shown next where the picklist values can be adapted to suit your organization. They are accessed by navigating to **Setup | Customize | Campaigns | Campaign Members | Fields**.

Campaign Member Standard Fields				Campaign Member Standard Fields Help ?
Action	Field Label	Field Name	Data Type	Controlling Field
Edit	Campaign	Campaign	Lookup(Campaign)	
Edit	City	City	Text(40)	
Edit	Company (Account)	CompanyOrAccount	Text(255)	
Edit	Contact	Contact	Lookup(Contact)	
Edit	Country	Country	Text(80)	
	Created By	CreatedBy	Lookup(User)	
	Created Date	CreatedDate	Date/Time	
Edit	Description	Description	Text(255)	
Edit	Do Not Call	DoNotCall	Checkbox	
Edit	Email	Email	Email	
Edit	Email Opt Out	HasOptedOutOfEmail	Checkbox	
Edit	Fax	Fax	Fax	
Edit	Fax Opt Out	HasOptedOutOfFax	Checkbox	
Edit	First Name	FirstName	Text(40)	
Edit	First Responded Date	FirstRespondedDate	Date	
	Last Modified By	LastModifiedBy	Lookup(User)	
	Last Modified Date	LastModifiedDate	Date/Time	
Edit	Last Name	LastName	Text(40)	
Edit	Lead	Lead	Lookup(Lead)	
Replace Edit	Lead Source	LeadSource	Picklist	
Edit	Mobile	MobilePhone	Phone	
Edit	Phone	Phone	Phone	
Edit	Responded	HasResponded	Checkbox	
Replace Edit	Salutation	Salutation	Picklist	
Edit	State/Province	State	Text(40)	
Replace Edit	Status	Status	Picklist	
Edit	Street	Street	Text(255)	
Edit	Title	Title	Text(80)	
Edit	Zip/Postal Code	PostalCode	Text(20)	

Both your marketing and sales teams should also help define and agree on any required custom fields or picklist values, for example, segmentation definitions, status, and responses.

Campaign creation

To create campaigns, users must have the **Marketing User** checkbox selected in their user record and have the **Create** permission on campaigns in their profile, as shown previously.

To create a campaign, follow these steps:

1. Click on the **Campaigns** tab to view the campaign's home page or select **Campaign** from the **Create New** drop-down list in the sidebar.

2. Enter values for the fields that apply to the campaign, as shown in the following screenshot:

The screenshot shows the 'Campaign Edit' form for 'Widget Webinar FY12Q1'. The form includes a title bar with 'Campaign Edit' and buttons for 'Save', 'Save & New', and 'Cancel'. Below the title bar is the 'Campaign Information' section with the following fields:

Campaign Owner	Paul Goodey
Campaign Name	Webinar Widget FY12Q1
Active	<input type="checkbox"/>
Type	Webinar
Status	Planned
Start Date	20/01/2012 [05/06/2011]
End Date	20/01/2012 [05/06/2011]
Expected Revenue	50,000
Budgeted Cost	2,000
Actual Cost	
Expected Response (%)	40.00
Num Sent	0
Parent Campaign	

3. Now click on **Save**; or click on **Save & New** to save the campaign and then add another.

Member status values

New campaigns have two default member status values: **Sent** and **Responded**. These are populated from the **Campaign Member Status** picklist that we looked at earlier.

Nonsystem administrator users can, however, overwrite the status values (for the specific campaign record only) from within the campaign detail page by clicking on the **Advanced Setup** button, as shown in the following screenshot:

The screenshot shows the 'Campaign Detail' page for 'Webinar Widget FY12Q1'. The page includes a title bar with 'Campaign' and 'Webinar Widget FY12Q1', and buttons for 'Customize Page' and 'Edit Layout'. Below the title bar is a navigation bar with links for 'Back to List: Leads', 'Campaign Hierarchy (1)', 'Open Activities (0)', 'Activity History (0)', 'Attachments (0)', 'Opportunities (0)', and 'Campaign'. Below the navigation bar is the 'Campaign Detail' section with buttons for 'Edit', 'Delete', 'Clone', 'Manage Members', and 'Advanced Setup'. The 'Advanced Setup' button is highlighted with a red box. Below the buttons is a table with the following data:

Campaign Owner	Paul Goodey [Change]	Total Leads	0
Campaign Name	Webinar Widget FY12Q1 [View Hierarchy]	Converted Leads	0

Here, your users can edit or replace status values, or create new ones as required:

Campaign Member Status Help for this Page ?

Webinar Widget FY12Q1

Current Campaign: Webinar Widget FY12Q1 Status: Planned

Type: Webinar Active:

Member Status Values [Edit](#) [Replace](#)

Status	Responded	Default
Sent	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Responded	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Creating multiple responded values

You can have more than one **Responded** value. These are summed together to produce the **Total Responses** calculated field.

Target lists

Target lists is a marketing term used to describe the individuals or types of people that are to be included as part of the marketing campaign.

In some situations, such as with an online advertising campaign, people are not specifically set up as individual targets. Here, the campaign would usually be set up in Salesforce as one without members.

If your campaign is targeting individuals, it is important to create a target list that has been segmented according to criteria that will result in the highest quality returns.

Targeting existing leads or contacts

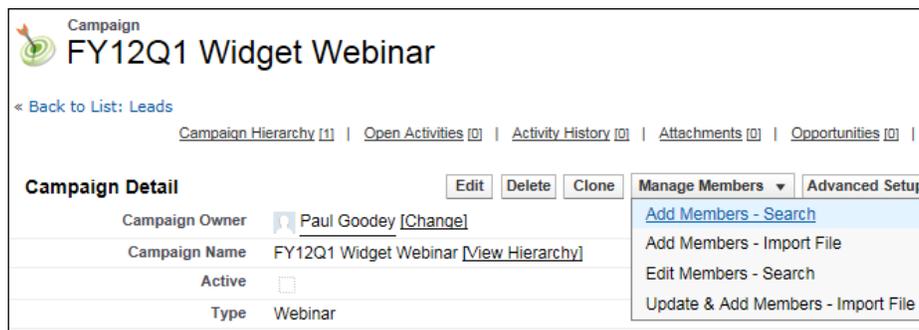
To target existing leads or contacts, you can use the following methods in Salesforce CRM:

Method	Description
Use the Campaign Detail page	Click on the Manage Members button to add multiple campaign members
Create Lead or Contact reports	Click on the Add to Campaign button to add multiple campaign members

Method	Description
Use Lead or Contact List views	Click on the Add to Campaign button to add multiple campaign members
Use the Lead or Contact Detail pages	Click on the Add to Campaign button to add a single campaign member

Using the campaign detail page

To add multiple campaign members from the **Campaign Detail** page, users should select the **Manage Members** button, as shown in the following screenshot:



You can add existing contacts or leads by selecting **Add Members - Search** from the **Manage Members** drop-down button on the **Campaign Detail** page.

Creating lead or contact reports

To add multiple campaign members from either lead or contact reports, perform the following steps:

1. Create a custom lead or contact report.
2. In the **Select Criteria** step, enter up to three criteria to segment the report data.

For example, to target all CFOs at Electronics or Energy companies with annual revenue greater than ten million, you would set the following:

- **Title equals CFO**
- **Industry equals Technology, Telecommunications** (using a comma to indicate an OR Boolean result)
- **Annual Revenue greater than 10,000,000**

Now, you can run the report and use the **Add to Campaign** button, as shown in the following screenshot:

Salutation	First Name	Last Name	Title	Mailing Street	Mailing City	Mailing State/Province	Mailing
Mr.	Sean	Forbes	CFO	312 Constitution Place Austin, TX 78767 USA	-	-	-
Mr.	Avi	Green	CFO	1302 Avenue of the Americas New York, NY 10019 USA	-	-	-

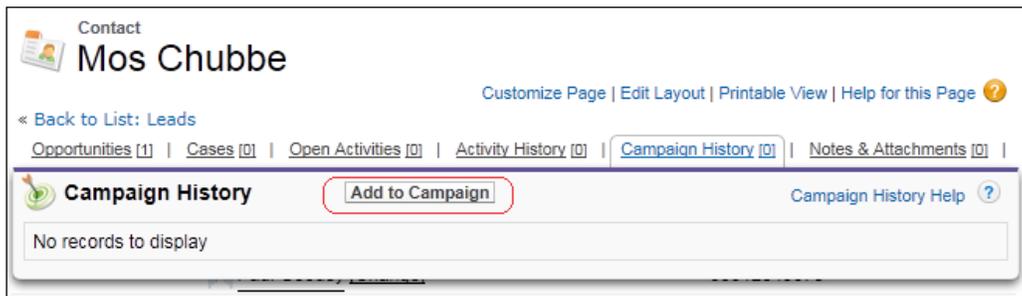
Using lead or contact list views

From within a lead or contact list view, you can click on the **Add to Campaign** button to add multiple campaign members, as shown in the following screenshot:

Action	Name	Company	State
Edit Del	Chubbe, Mos	Ideal Homes	
Edit Del	Glimpse, Jeff	Jackson Controls	

Using the lead or contact detail pages

You can use the **Add to Campaign** button within the **Lead Detail** and **Contact Detail** pages to add that record as an individual campaign member, as shown in the following screenshot:



Targeting new leads or prospects

When using externally purchased lists of new prospects within Salesforce, it is advisable to flag the records with a specific third-party designation (say, by record type or custom picklist value). These records can then be prequalified before adding to any campaign or sales activity. Particularly important is the de-duplication of any new leads against existing records in your Salesforce database to determine which are existing customers or leads.

Salesforce does not recommend mass importing rented or purchased lists of prospects into Salesforce, as these lists are usually controlled by the list vendor and might have restriction or limited use policies. Here, you should simply make use of the list of names as your target list and only after the prospect has responded to your campaign should you import the lead record.

Campaign execution

Although campaign execution activities occur outside the Salesforce CRM application during the execution of either an offline or an online campaign, there are some features of the campaign activity that can be aided using the export facilities within Salesforce.

Users can use Salesforce to generate lists of accounts and individuals for mailing houses or e-mailing specialist partners to send out the mass marketing e-mails used in both online and offline events (such as trade shows, advertisements, direct mail, and so on).

There are various options available to integrate Salesforce with other solutions, including provisions for mass e-mailing. Integration solutions are covered later in this book where sources include the AppExchange directory (a Salesforce.com sponsored market place for accredited products and services).

Salesforce can be used to deliver some mass e-mails, but the application is not intended for large volume mass e-mail marketing, and there are limits to the quantity of e-mails that can be sent.

For each Salesforce application, a total of 1,000 e-mails can be sent per day to external e-mail addresses. Using the Enterprise Edition, the maximum number of external addresses (unique or nonunique) you can include in a mass e-mail is 500 and for the Unlimited and Performance Edition, the limit is 1,000.



The mass e-mail limits do not take unique addresses into account. For example, if you have `john.smith@widgetsXYZ.com` in your mass e-mail 500 times, it counts as 500 against any limit.

You can build an integrated web form to automatically capture individuals as leads in Salesforce. This is detailed later in this chapter in the *Lead management* section under *Marketing administration*.

Campaign responses

After the campaign has been executed, your company will want to track the responses, which can include the following:

- Website response using a form on your website where you can set up a Web-to-Lead form to create a target page with a response form. All responses appear in Salesforce as leads but can be linked to the campaign. This is covered later in this chapter.
- Mass update or offline response using the campaign member import wizards to import a list of leads or contacts and their responses. Users need the **Marketing User** profile or the **Import Leads** permission to use these wizards.

- Manual response; for example, when prospects and customers respond by phone or e-mail, users can manually record these responses on the **Campaign History** related list on the lead or **Contact Detail** page.

Action	Campaign Name	Start Date	Type	Status	Responded	Member Status Updated
Edit Del View	Webinar Widget FY12Q1	20/01/2012	Webinar	Sent	<input type="checkbox"/>	05/06/2011 16:26

Campaign influence

To ensure existing opportunities are included in the results for the campaign, you can add the campaign to the **Campaign Influence** related list on the opportunity, as shown next.

 The **Campaign Influence** related list is not included in the set of related lists on the **Opportunity** page layout by default, so you might need to include it on your chosen **Opportunity** page layout.

By setting the **Primary Campaign Source** flag (a checkbox on the **Campaign Influence** record), the opportunity amount is included in the campaign statistics and reports.

Action	Campaign Name	Contact Name	Contact Role	Responded	Primary Campaign Source
Edit Del	Webinar Widget FY11Q2				<input checked="" type="checkbox"/>

Campaign effectiveness

Campaign effectiveness can be analyzed using either the statistics on the campaign record or by running campaign reports.

Campaign statistics

The summary fields on the **Campaign Detail** page, as shown next, allow various statistics to be seen, such as the total number of responses, the amount of business generated from the campaign, and so on.

Campaign

Webinar Widget FY11Q2

[Customize Page](#) | [Edit Layout](#) | [Printable View](#)

« [Back to List](#)

[Campaign Hierarchy \[1\]](#) | [Open Activities \[0\]](#) | [Activity History \[0\]](#) | [Attachments \[0\]](#)
[Campaign Members \[5+\]](#) | [Links to Objects \[0\]](#)

Campaign Detail

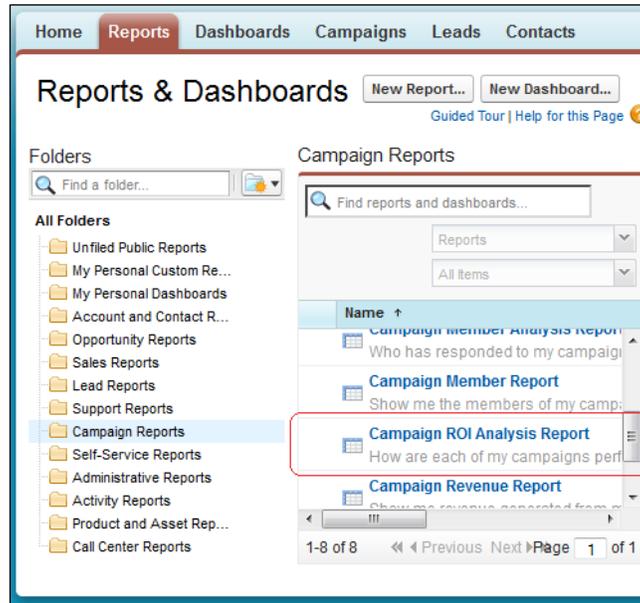
Edit Delete Clone Manage Members ▾ Advanced

Campaign Owner	Paul Goodey [Change]	Total Leads	1
Campaign Name	Webinar Widget FY11Q2 [View Hierarchy]	Converted Leads	1
Active	<input checked="" type="checkbox"/>	Total Contacts	39
Type	Webinar	Total Responses	31
Status	Completed	Num Total Opportunities	3
Start Date	01/06/2011	Num Won Opportunities	2
End Date	01/06/2011	Total Value Opportunities	\$30,000
Expected Revenue	\$25,000	Total Value Won Opportunities	\$30,000
Budgeted Cost	\$3,000		

The campaign statistics are automatically recalculated every time a campaign is saved. When a lead gets converted to an opportunity, the campaign that was most recently associated to the lead will automatically pass over to the opportunity.

Campaign reports

Reports can be accessed from the **Reports** tab by selecting the **Campaign Reports** folder, as shown in the following screenshot:



As an example, the **Campaign ROI Analysis Report** shows you performance metrics and gives you a figure for the return on investment for the campaign, as shown in the following screenshot:

Campaign ROI Analysis Report

Report Generation Status: Complete

Report Options:

Summarize information by: Select campaign:

Campaign Name	Campaign Type	Campaign Status	Start Date	Num Sent	Total Responses	Num Total Opportunities	Num Won Opportunities	Total Value Won Opportunities	Actual Cost	ROI
Webinar Widget FY11Q2	Webinar	Completed	01/06/2011	100	30	2	2	\$30,000	\$2,500	1,100%
Grand Totals (1 record)										

ROI calculation



The ROI percentage calculation taken from the **Campaign ROI Analysis Report** uses the following equation:

$$((\text{Total Value of Won Opportunities} - \text{Actual Cost}) / \text{Actual Cost}) * 100.$$

In the example shown, we have $((30,000 - 2500) / 2500) * 100 = 1100\%$.

Lead management

Managing prospective customers appropriately often raises issues within companies. The status and quality of prospect data can cause obstacles when trying to automate processing through the sales process. Prospect data often comes from various sources that, if not carefully controlled, can make them difficult to accurately process.

Without a central system and agreed approach, there can be conflicts between the marketing team, who are often unable to trace what is happening to the prospects after distributing them to sales, and the sales team, who are unable to verify the quality of the data. Salesforce CRM helps bridge any gap between sales and marketing, and by using lead management mechanisms, it offers a way to improve the management and automation of the flow from potential customers to a closed sales deal.

Leads are prospects or potential opportunities and are accessed in Salesforce CRM from the **Leads** tab. They are sources of potential deals that usually need more qualification and can be visitors to your website who requested more information, respondents to marketing campaigns as described previously in managing campaigns, trade show visitors, and so on. Leads are stored and managed separately from account, contact, and opportunity records, which are covered later in this chapter.

Standard lead fields

The following key standard fields are available on the **Lead** object:

Field	Type	Description
Lead Owner	Lookup (to lead or queue)	This field is the user or queue who owns the lead. A lead can be owned by a person or stored in a queue. Here, you can allow specified users to accept (and return) leads from a queue. This is covered in more detail later in this section.
Last Name	Text	This field is the last name and is a required field. The last name is copied over to the Last Name field on a contact record during the lead conversion process.
Company	Text	This field is the company name and is a required field. The company name is copied over to the company name on an account record during the lead conversion process.

Field	Type	Description
Lead Status	Picklist	This field is the status and is a required field. Salesforce provides these standard values: Open - Not Contacted, Working - Contacted, Closed - Converted, and Closed - Not Converted. Lead Status is an important field used in the lead process settings, as described later in this section.
Lead Source	Picklist	This field is used to set the source from which the lead appeared. Salesforce provides these standard values: Web, Phone Inquiry, Partner Referral, Purchased List, and Other.

The complete set of fields is shown next, where the picklist values can be adapted to suit your organization. They are accessed by navigating to **Setup | Customize | Leads | Fields**.

Lead Standard Fields			
Action	Field Label	Field Name	Data Type
	Address	Address	Address
Edit	Annual Revenue	AnnualRevenue	Currency(18, 0)
Edit	Campaign	Campaign	Lookup(Campaign)
Edit	Company	Company	Text(255)
	Created By	CreatedBy	Lookup(User)
Edit	Description	Description	Long Text Area(32000)
Edit	Do Not Call	DoNotCall	Checkbox
Edit	Email	Email	Email
Edit	Email Opt Out	HasOptedOutOfEmail	Checkbox
Edit	Fax	Fax	Fax
Edit	Fax Opt Out	HasOptedOutOfFax	Checkbox
Replace Edit	Industry	Industry	Picklist
	Last Modified By	LastModifiedBy	Lookup(User)
Edit	Last Transfer Date	LastTransferDate	Date
Edit	Lead Owner	Owner	Lookup(User, Queue)
Replace Edit	Lead Source	LeadSource	Picklist
Replace Edit	Lead Status	Status	Picklist
Edit	Mobile	MobilePhone	Phone
	Name	Name	Name
Edit Replace	Salutation	Picklist	
	First Name	Text(40)	
	Last Name	Text(80)	
Edit	No. of Employees	NumberOfEmployees	Number(8, 0)
Edit	Phone	Phone	Phone
Replace Edit	Rating	Rating	Picklist
Edit	Title	Title	Text(80)
Edit	Website	Website	URL(255)

Lead business process

Creating a business process within the lead management function involves agreeing on and implementing the steps and field values that are to be recorded by the sales and marketing teams during the lead life cycle.

The lead processes are accessed by navigating to **Setup | Customize | Leads | Lead Processes**, where processes can be created or edited as shown in the following screenshot:

You can now assign the status values for the lead, as shown in the following screenshot:

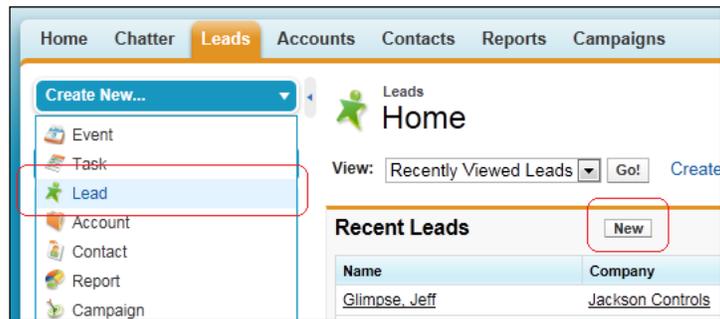
Finally, associating the lead business process with one or more record types will make it available to your users (based on their profile).

Creating leads in Salesforce CRM

There are several ways to create lead records within the Salesforce CRM application. This includes the manual entry of single leads by your users, the manual entry of leads by the prospects themselves (using public facing web forms known as Web-to-Lead), or the manual importing of multiple leads within the application by you or your users.

Creating lead records within the application

Leads can be manually created from either the **Leads** tab by clicking on the **New** button, or from the **Create New** selection in the left-hand side bar, as shown in the following screenshot:



Manually creating leads with Web-to-Lead

With the Web-to-Lead functionality in Salesforce CRM, leads can be directly entered into your Salesforce application from a public-facing website. This means prospect information can be gathered directly from the individual. This feature is used to generate **HyperText Markup Language (HTML)** code that can then be incorporated into the required web page.

Lead settings

To enable the Web-to-Lead feature, you must first configure the appropriate lead settings by navigating to **Setup | Customize | Leads | Settings**. Now, click on the **Edit** button to display the page, as shown in the following screenshot:

Edit Lead Settings

Use the lead settings below to specify default lead behavior for your organization.

Lead Queue Settings

The queue or user that will own a lead when assignment rules fail to locate an owner:

- when a lead is saved with the auto-assign checkbox selected
- when a lead is captured online

User User Paul Goodey 

Notify Default Lead Owner

Lead Conversion Settings

Require Validation for Converted Leads 

Preserve Lead Status 

Enable Conversions on the Salesforce1 App 

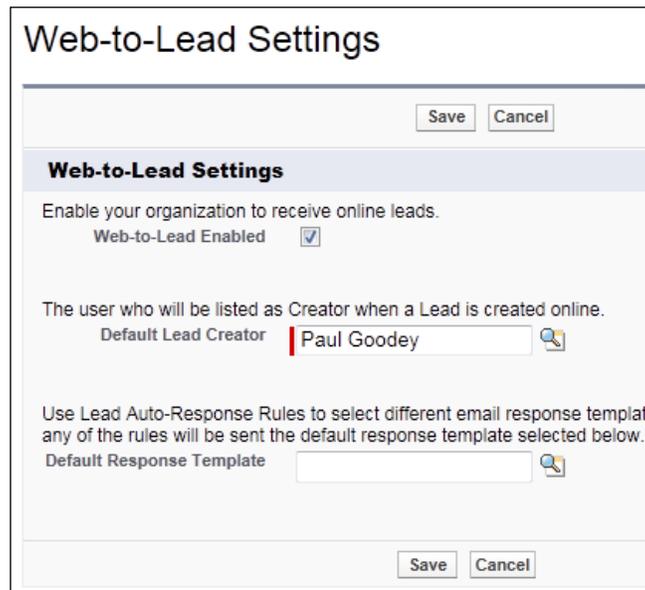
Now, select **Default Lead Owner** and select the **Notify Default Lead Owner** checkbox to automatically notify the default lead owner whenever a lead is assigned to them.



The default lead owner becomes the owner of any leads that are not autoassigned by lead assignment rules.

The Web-to-Lead settings

To enable the Web-to-Lead feature, you must first configure the Web-to-Lead settings by navigating to **Setup | Customize | Leads | Web-To-Lead**. Now, click on the **Edit** button to display the page, as shown in the following screenshot:



The screenshot shows the 'Web-to-Lead Settings' configuration page. At the top, there are 'Save' and 'Cancel' buttons. Below this is a section header 'Web-to-Lead Settings' followed by the instruction 'Enable your organization to receive online leads.' The 'Web-to-Lead Enabled' checkbox is checked. The 'Default Lead Creator' is set to 'Paul Goodey' in a dropdown menu. The 'Default Response Template' is also set in a dropdown menu. At the bottom, there are 'Save' and 'Cancel' buttons.

Now, select the **Web-to-Lead Enabled** checkbox, select the user who will be set as the creator whenever the lead is entered from an online web form, and finally, create Web-to-Lead e-mail auto-response rules to determine which e-mails are to be sent to prospects when they submit information online. Then, click on **Save**.

Generating the Web-to-Lead HTML code

To generate the Web-to-Lead HTML code, navigate to **Setup | Customize | Leads | Web-To-Lead**. Now, click on the **Create Web-To-Lead Form** button to display the page, as shown in the following screenshot:

Web-to-Lead Setup

Easily set up a page on your website to capture new leads.

Create a Web-to-Lead Form

Select the fields to include on your Web-to-lead form:

Available Fields		Selected Fields
<div style="border: 1px solid gray; padding: 5px;"> Salutation Title Website Phone Mobile Fax Address Zip Country </div>	Add <input type="button" value="▶"/> Remove <input type="button" value="◀"/>	<div style="border: 1px solid gray; padding: 5px;"> First Name Last Name Email Company City State/Province </div> <div style="text-align: right; margin-top: 5px;"> <input type="button" value="Up"/> <input type="button" value="Down"/> </div>

After users submit the Web-to-Lead form, they will be taken to the specified website, such as a "thank you" page.

Return URL

Now, select the fields to include in the form, and specify a URL that users will be taken to after submitting the form. Finally, click on the **Generate** button, and then copy the generated HTML code and send it to the team responsible for the website in your organization.

The page style can be customized for your website, but the core form elements that have been generated within the HTML code should not be changed.

With the Web-to-Lead feature, you can capture up to 500 leads per day.

[


]

To increase the limit of 500 leads per day
 This feature can be increased by sending a request to Salesforce customer support, although there might be additional costs for this increase.

Web-to-Lead auto-response rules

Auto-response rules provide a method to customize any communication that is sent back to an individual after they have filled out a web lead form. These autoresponse rules can contain logic to determine which e-mail template and what content is to be sent to leads that have been generated using Web-to-Lead.

To enable auto-response rules, navigate to **Setup | Leads | Auto-response Rules**. Then, click on the **New** or **Edit** button, as shown in the following screenshot:

The screenshot shows the configuration page for a Web-to-Lead Auto-Response Rule named "Salesforce CRM Demo". The page includes a "Rule Detail" section with fields for "Rule Name", "Active" (checked), "Created By", and "Modified By". Below this is a "Rule Entries" section with a table containing one entry. The entry has an order of 1, criteria based on lead country, a sent from email address, and a marketing response template.

Action	Order	Criteria	Sent From (Email)	Template
Edit Del	1	(Lead: Country EQUALS US) OR (Lead: Country EQUALS USA) OR (Lead: Country EQUALS United States)	Lead Automation (donotreply@widgetsxyz.com)	Marketing Product Inquiry Response

Here, you first create the rule detail and name and activate the rule. Then, you add the rule entries that contain the logic and where multiple rule entries can be created. Rule entries require the following:

- An order of execution
- The criteria for when the rule is triggered
- A sent from e-mail address detail
- An e-mail template to be used to send to the respondent



Any e-mails that are sent are included in the daily limit of 1,000 mass e-mails for an organization.

Manual importing of multiple leads

To import leads, navigate to **Setup | Data Management | Import Leads**. Now, follow the onscreen instructions to export your data from its current source and label each column in the file with the correct field name, as shown in the following screenshot:

Only users with the **Import Leads** permission on their profile (in the general user permissions section) have access to the importing leads feature where files of up to 50,000 leads can be imported.

A lead assignment rule can automatically assign leads to users or queues based on values in lead fields. Alternatively, a **Record Owner** field in the import file can determine lead ownership for each imported lead.

Without a lead assignment rule or **Record Owner** field, imported leads are automatically assigned to the user who has carried out the import.

Import Queue shows you the status of the import. You will be notified by e-mail when your import is complete (this notification might take up to 24 hours).

Marketing users with the **Marketing User** profile can also import new leads by selecting **Add Members - Import File** from the **Manage Members** drop-down button on the **Campaign Detail** page.

Lead queue

Queues can be thought of as a storage location to group leads together, usually by geographic region or business function. Leads remain in the queue until they are assigned or accepted by users. Users who have been included as part of the queue can access and accept the records by clicking on the **Accept** button, as shown in the following screenshot:



 Whenever you create a lead queue, Salesforce automatically generates a lead list view to enable users to access the records in the queue.

Creating and adding users to a lead queue

To create and provide users with access to a lead queue, navigate to **Setup | Manage Users | Queues | New**.

Here, you can carry out these operations: name the queue, select the supported object (either lead or case), and assign the queue member (either users, public groups, roles, or role and subordinates).

You can also set up the queue so that e-mails are sent to the queue members (using a default e-mail address for the queue) whenever a case is assigned to the queue.

Lead assignment rules

Lead assignment rules determine how leads are automatically assigned to users or a queue. They contain rule entries that are predefined business rules that determine the lead routing.

Lead assignment rules can be accessed by navigating to **Setup | Customize | Leads | Assignment Rules**.

Only one lead assignment rule can be active at any given time, but each rule can have multiple criteria, as shown here:

Lead Assignment Rules [Help for this Page](#) ?

Lead Assignment Rules allow you to automatically route leads to the appropriate users or queues. A Lead Assignment Rule consists of multiple rule entries that define the conditions and order for assigning leads.

[New](#)

Action	Rule Name	Active	Created By	Created On
Rename Del	Standard	<input checked="" type="checkbox"/>	Paul Goodey	19/12/2009
Rename Del	test	<input type="checkbox"/>	Paul Goodey	03/02/2010

Criteria are evaluated in the order in which they appear in the list. When there are multiple rules that could be applied, you can set the priority for the criteria by setting the most specific criteria at number 1 and then adding more criteria numbers that are more generic. The following screenshot shows you a simple example and the use of multiple criteria rules that are used to assign leads according to a geographic flag using the **Country** field:

Lead Assignment Rule [Help for this Page](#) ?

Standard

Create the rule entries to automatically assign leads to users or queues based on the criteria specified in the rule entries. You can reorder the entries from this page after creating them.

Rule Detail [Edit](#)

Rule Name	Standard	Active	<input checked="" type="checkbox"/>
Created By	Paul Goodey , 19/12/2009 13:01	Modified By	Paul Goodey , 15/06/2011 20:45

[Edit](#)

Rule Entries [New](#) [Reorder](#)

Action	Order	Criteria	Assign To	Email
Edit Del	<input type="text" value="1"/>	Lead: Country EQUALS US,USA,United States,United States of America	Paul Goodey	<input type="checkbox"/>
Edit Del	<input type="text" value="2"/>	Lead: Country NOT EQUAL TO US,USA,United States,United States of America	Trevor Howard	<input type="checkbox"/>

Lead conversion

Lead qualification depends on your business process and should have been developed in conjunction with both the marketing and sales teams.

As part of the lead conversion routine, certain key information contained on the lead record is mapped to the Salesforce CRM objects' account, contact, and optionally, the opportunity records. During lead conversion, new records are created for these objects where the account record name field will contain the **Company Name** field value from the lead, and the contact record name field will be populated from the **Name** field within the lead record.

 Any existing account or contact records are automatically checked before the lead conversion to avoid record duplication.

Opportunities that are created upon lead conversion contain default values for the required fields where **Close Date** defaults to the last day of the current quarter and **Sales Stage** is set to the first value in the **Stage** picklist.

 During the lead conversion, there is no opportunity amount value set on the resulting opportunity.

To convert a lead, select the lead that is to be converted either by clicking on the **Lead** tab and selecting from the list view or by searching and then clicking on **Convert** on the **Lead Detail** page, as shown in the following screenshot:



The lead conversion screen will be displayed, where you can check the owner of the new records. Here, you can choose to send the record owner an automated notification e-mail. You can also set the status of the converted lead and specify that a new task is created for the record owner to act as a follow-up task, as shown in the following screenshot:

Convert Lead Help for this Page ?

Convert Lead ! = Required Information

Record Owner

Send Email to the Owner

Account Name [View](#)

Opportunity Name
 Do not create a new opportunity upon conversion.

Converted Status

Task Information

Subject Status

Due Date

Priority

Location

Zip/Postal Code

Status

Description Information

Comments

Send Notification Email

Reminder

Reminder

Before creating any new account or contact records, the Salesforce CRM application attempts to match existing account and contact names and the name of the lead. When there is a match, you will have the option of selecting the existing records, as shown in the following screenshot:

Convert Lead

Record Owner

Send Email to the Owner

Account Name [View](#)

Opportunity Name
 Do not create a new opportunity upon conversion.

Converted Status

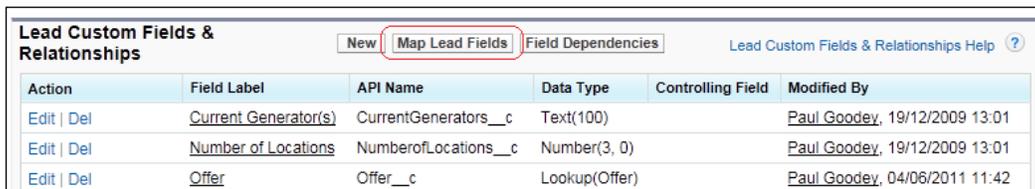
Clicking on the **Convert** button completes the lead conversion process and results in the following:

- The company name from the lead becomes the account name
- The lead name from the lead becomes the contact name
- The opportunity and contact are associated with the account
- Any campaigns related to the lead are associated with the opportunity

 Converted leads can no longer be viewed in the **Leads** tab and the only way to view the record is to create a lead report. When customizing your report, enter a filter option of **Converted equals True** to view converted leads.

Lead conversion field mappings

There are standard field mappings between the lead and account, contact, and opportunity records that are provided by Salesforce for the lead conversion process; however, you can extend these. To extend the mappings, navigate to **Setup | Customize | Leads | Fields**. Now, go to the **Lead Custom Fields & Relationships** section at the bottom of the page, as shown in the following screenshot:



Action	Field Label	API Name	Data Type	Controlling Field	Modified By
Edit Del	Current Generator(s)	CurrentGenerators__c	Text(100)		Paul Goodev , 19/12/2009 13:01
Edit Del	Number of Locations	NumberofLocations__c	Number(3, 0)		Paul Goodev , 19/12/2009 13:01
Edit Del	Offer	Offer__c	Lookup(Offer)		Paul Goodev , 04/06/2011 11:42

Extending the field mappings might become necessary whenever you add required custom fields on either the account, contact, or opportunity records that are to be populated from the lead records. This is done as shown in the following screenshot:

Lead Custom Field Mapping

Map each of your organization's lead custom fields to one of your custom account, contact, or opportunity fields. These mappings will be used when you convert leads.

Lead Custom Field Mapping

Take this lead custom field...	...and map it to this field
Current Generator(s)	<input type="text" value="--None--"/>
Number of Locations	<input type="text" value="--None--"/>
Offer	None Available
Primary	<input type="text" value="--None--"/>
Product Interest	<input type="text" value="--None--"/>
SIC Code	<input type="text" value="--None--"/>

It is important to ensure the field mapping is in place whenever you have certain mandatory fields or rules for your account, contacts, or opportunities. This is because the validation logic for required custom fields and workflow or validation rules is enforced by the Salesforce application during the lead conversion process.

Salesforce automation

Salesforce automation allows the management and control of the phases required for the sales process within a **Customer Relationship Management (CRM)** system. Enabling and automating these phases within CRM systems helps improve quality and also minimizes the time that sales representatives spend on each phase.

Salesforce automation in Salesforce.com is performed within the Sales App, which can be accessed from the App Menu in the top-right corner of the Salesforce CRM screen.

At the core of the Sales App in Salesforce CRM are the account, contact, and opportunity management functions that track and record each stage in the sales process for new and existing customers.

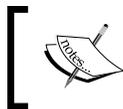
Accounts can be sorted by standard views or customized views, and users can add new accounts and edit existing accounts. Associated contacts and activities are also listed in the same page of the account where users can manipulate other operations, such as viewing, adding, and editing, as required. Account views can be filtered based on time variables, such as by viewing recently modified or created accounts, new accounts this week, and so on.

Account management

In Salesforce CRM, account management is carried out using the facilities found in the **Accounts** tab and is typically where customer information is located.

Account records are used to store the company information from converted leads and can also be used for the storage of company information for partners, suppliers, and even competitors.

Accounts might be considered "business accounts" from a **business-to-business (B2B)** perspective and are usually the company records stored within the application. However, Salesforce provides another variety of accounts called person account, which allows organizations with a **business-to-consumer (B2C)** business model to manage the relationships with individuals. The business account and person account records offer very similar features and fields; however, person accounts do not have certain fields or features such as a **Reports To** field, a **Parent Account** field, or the **Account Hierarchy** feature.



Person accounts are not enabled in the Salesforce CRM application by default and are only available by sending a request to Salesforce customer support.

Business account information consists of company name, type, company website, industry, annual revenue, billing and shipping addresses, account record owner, date of creation and modification, and so on.



Naming convention for accounts

Having consistent account names is essential to ensure clean and accurate account data. It can be useful to adopt an appropriate account naming policy to be used by all users in Salesforce. One way to achieve this is to ensure that accounts are named using their full legal name wherever possible.

As described earlier in this book, accounts are also the primary mechanism used in the organization of records.

They are used within the record sharing and ownership hierarchy and are the parent object for standard objects, such as contacts, opportunities, and so on. When changing the ownership of account records, you have the option to reassign these child records, as shown in the following screenshot:

Select New Owner

Transfer this account Company X

Owner

Transfer open opportunities not owned by the existing account owner

Transfer closed opportunities

Transfer open cases owned by the existing account owner

Transfer closed cases

Send Notification Email

Contact management

Contact management is performed using the facilities found in the **Contacts** tab. Contacts are the individuals that your users want to keep in touch with. For the sales team, this is likely to be people such as purchasers and key decision makers. For the marketing team, this might include the CEOs, CFOs, and other influencers. For support, the contacts could be any of the users of the product or service that your organization provides.

Salesforce CRM provides the facility for users to store, view, sort, filter, delete, edit, and find contact information that might or might not be associated with accounts. Each contact is recorded with details, such as title, contact details (address, cell phone, work phone, fax, and e-mail address), date of creation and modification, and contact record owner.

Activity management

Activities in Salesforce are made up of tasks and events. Unlike other areas of functionality, there is no access to Activities from the tab; instead, they are created and viewed from related lists on other types of records, such as account, contact, case, and so on. Users can view activities both in the context of a relevant item (such as where they relate to an account, for example) or as a standalone mechanism from their calendar and task lists from the Salesforce CRM home page.

The **Activity History** related list of a record shows all completed tasks, logged phone calls, expired events, such as meetings, outbound e-mails, and so on for the record and any linked records.

Cloud Scheduler

Creating and scheduling appointments with customers is a central activity of most customer-oriented businesses. Marketing, sales, and customer support teams spend time getting in touch with prospects and customers and use a variety of means to agree on a time and place to meet.

To improve this activity, Salesforce provides the **Cloud Scheduler** facility, an automated system that's used to manage the scheduling and presentation of suitable appointment times to individuals through a web interface.



As part of the Cloud Scheduler feature, Salesforce creates a unique web page for the meeting that displays the proposed meeting times. When invitees visit the web page, they can select the times that are suitable for them and then send a response.

The Cloud Scheduler feature requires the new user interface theme to be enabled and is supported with one of these compatible browsers: Internet Explorer 7 or 8, Firefox 3.0 or higher, Safari 3.2 or higher, and Chrome 6.0 or higher

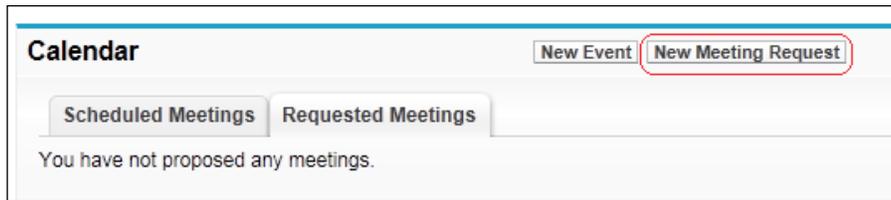
All the responses from invitees are then tracked by Salesforce and a date and time that fits everyone can then be selected and chosen as the confirmation for the meeting.

Cloud Scheduler setup

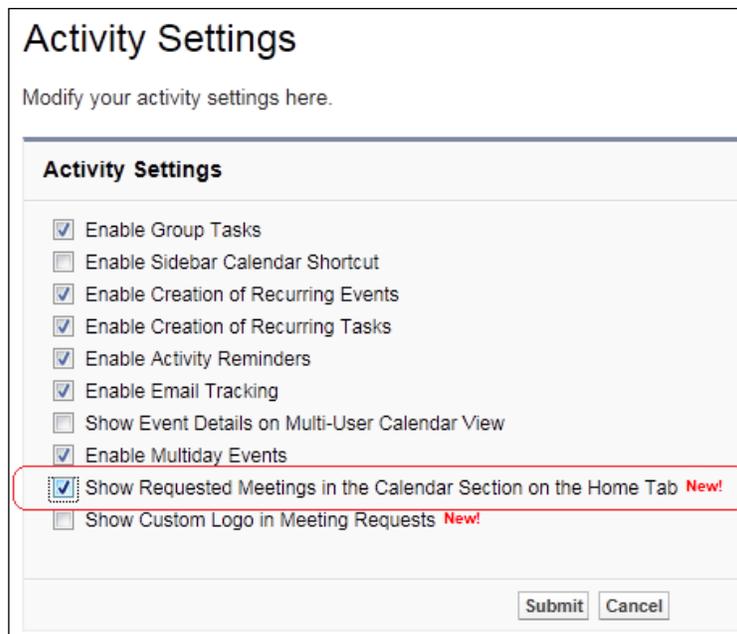
First of all, the settings for the Cloud Scheduler can be configured by navigating to **Setup | Customize | Activities | Cloud Scheduler**. The **New Meeting Request** button for the Cloud Scheduler can be added to page layouts with an **Open Activities** related list, such as contacts, leads, or person accounts (if enabled).

For users to request a meeting with a person account, you might also need to add the **Email** field to the page layout by navigating to **Setup | Customize | Accounts | Person Accounts | Page Layouts**.

You can also include the **New Meeting Request** button on the user's home page. This is displayed above the **Scheduled Meetings** and **Requested Meetings** tabs, as shown in the following screenshot:



If this section is not displayed on the home page, then **Show Requested Meetings in the Calendar Section on the Home Tab** needs to be selected by navigating to **Setup | Customize | Activities | Activity Settings**, as shown in the following screenshot:

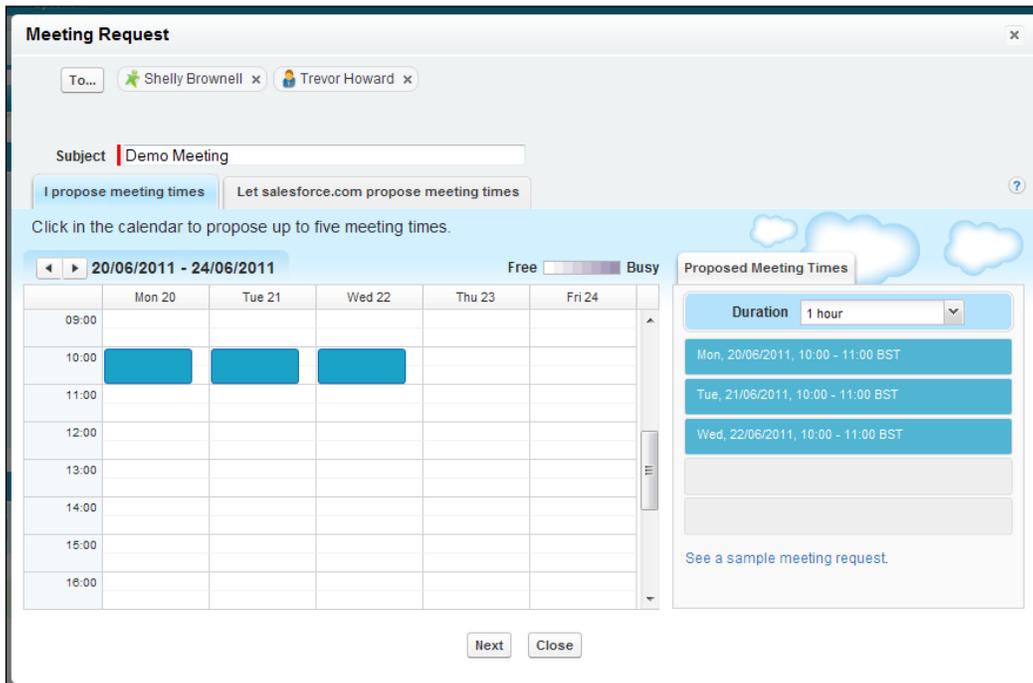


Cloud Scheduler requesting a meeting

This section offers an overview of how users within your organization can request a meeting with coworkers and customers using Cloud Scheduler.

Requesting a meeting

Users can either navigate to the contact or the **Lead Detail** page of the individual they want to request a meeting with through the **Open Activities** related list, or they can navigate to the calendar section on their home page. They can then click on the **New Meeting Request** button to display the **Meeting Request** page. Here, users click to invite other Salesforce users, leads, contacts, or person accounts to the meeting and click in the calendar to propose up to five meeting times; or they can choose to let the Salesforce application automatically propose times, as shown in the following screenshot:



Invitee responses

Salesforce e-mails a meeting request to the invitees so that they can pick the times they are available. Within the e-mail is a link that the invitees click on; it is called **Respond to This Request** and it opens the meeting's web page. Within the web page, invitees can pick the proposed times that are suitable for them, and then send a reply, as shown in the following screenshot:

Meeting Request from:
Paul Goodey

Subject Demo Meeting
Who Trevor Howard, Paul Goodey, Shelly Brownell
When Between 20/06/2011 – 22/06/2011 BST
Duration 1 hour
Where To be determined

Trevor Howard, select times that work for you.

<input type="checkbox"/> Mon 20/06/2011 10:00 - 11:00 (BST)	<input type="checkbox"/> Tue 21/06/2011 10:00 - 11:00 (BST)
<input type="checkbox"/> Wed 22/06/2011 10:00 - 11:00 (BST)	<input type="checkbox"/> None of these times works for me.

Write your message...

Reply

Messages

Paul Goodey (6 minutes ago) Selected 3 times.

Demo Meeting

Powered by salesforce.com
<http://www.salesforce.com/>

Confirming the meeting

Salesforce keeps track of all the responses so users can see when each invitee is available and can then select the best time to meet and confirm the meeting, as shown in the following screenshot:

Meeting Request

To... Shelly Brownell x Trevor Howard x

Subject Demo Meeting

Attendee Availability

	Mon 20/06/2011 10:00 - 11:00 BST	Tue 21/06/2011 10:00 - 11:00 BST	Wed 22/06/2011 10:00 - 11:00 BST
Paul Goodey	Free	Free	Free
Shelly Brownell	Shelly Brownell has not yet responded.		
Trevor Howard Replied < 1 minute ago.	Available	Available	Available
Select One	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Messages

Paul Goodey (37 minutes ago) You selected 3 times.

Demo Meeting

Powered by salesforce.com
<http://www.salesforce.com/>

Trevor Howard (< 1 minute ago) Selected 3 times.

Reschedule Send Update Cancel Meeting Close

Opportunity management

Opportunity management is performed using the facilities found in the **Opportunities** tab.

Opportunities in Salesforce CRM are the sales deals that the sales team in your organization creates and updates. By adding new opportunities, the sales team is building the sales pipeline that will be used to produce figures for both individual sales forecasts as well as the wider company sales forecast.

Opportunity records are also important for other users in your organization to track, such as the marketing team that might want to monitor the effectiveness of marketing campaigns or the customer support team that might need to have an up-to-date view of customer spending when negotiating support contracts.

Service cloud

At the core of the service cloud in Salesforce CRM is the case management functionality that tracks and records activities dealing with customer, service, and support automation. Case records, in Salesforce, are associated with contacts and/or accounts.

A case is a detailed description of a customer's feedback, problem, or question. Your organization can use cases to track and solve your customers' issues. Cases can be manually entered from within the **Cases** tab by the support or sales team after, say, a phone call or e-mail to or from a customer. However, you can also set up more complex Web-to-Case and Email-to-Case to obtain customer responses from your company's website and customer e-mails.

Case management

There are number of ways case records, which might consist of recorded phone calls or e-mail communications, can be entered into the Salesforce CRM application. Case records can be entered manually by the users accessing the **Case** tab, but there are other methods available for you to consider, which include:

- Automatic creation from an e-mail using Mail-to-Case sent by a customer
- Automatic creation from a web form using Web-to-Case entered by a customer

The Email-to-Case feature

The Email-to-Case feature provides the facility for automatic case creation when an e-mail is sent to a preconfigured e-mail address.

The Web-to-Case feature

The Web-to-Case feature provides the facility where customers can submit support cases online.

 The Web-To-Case feature can be used to generate up to 500 new cases a day.

When setting up Web-to-Case, autoresponder rules can be created that use e-mail templates to send an acknowledging e-mail to customers who have created cases using the web form.

Case queues

Queues can be thought of as a storage location to group cases together – usually by a geographic region or business function. Cases remain in the queue until they are assigned or accepted by users.

Whenever you create a case queue, Salesforce automatically generates a case list view to enable users to access the records in the queue.

Case records can be assigned to queues manually or automatically using assignment rules. Case queues and assignment rules are very similar to the queues and assignment rules available for leads.

Assignment rules

Only one case assignment rule can be active at any one time, and each rule can contain multiple criteria – up to a maximum of 25 criteria.

Escalation rules

Escalation rules are used to automatically escalate an unresolved case within a certain period of time. This escalation is triggered on the **Age Over** setting (when the **Age** field is overdue).

The modification of a field on a case is the only thing that stops the clock for escalation rules if the rule is set to "disable after first modified" or is based on the last modification time of the case.



For each escalation rule, you can specify up to five actions to escalate the case over increasing periods of time.

The **Age Over** field specifies the number of hours after which a case should be escalated if it has not been closed.

This time is calculated from the date field set in the **Specify how escalation times are set** field.

No two escalation actions can have the same time period set.

Sending an e-mail to a customer from the case record does not reset the case escalation. Only when the record is changed, and not a related list, is the case escalation time reset.

Escalation rules use business hours to determine when to escalate a case. The case feature can include business hours in multiple time zones and can associate cases to various time zones.

Each escalation rule can have multiple criteria settings and up to five escalation actions per entry. An example of one such action is shown in the following screenshot:

Escalation Action Edit Help for this Page ?

Save Cancel

Escalation Action Edit ! = Required Information

Step 1: Specify the time criteria for this escalation rule

Age Over (Business hours) 2 Hours 0 minutes

You can choose one or more of the following escalation actions.

Step 2: Select the user or queue to auto-reassign the case to

User Paul Goodey Notification Template Support: Escalated Case

Step 3: Select the user to notify

Notify This User Paul Goodey Notification Template Support: Escalated Case

Notify Case Owner

You can enter up to five (5) email addresses to be notified. Please put each address on its own line.

Additional Emails

Save Cancel

Early triggers

The early triggers mechanism enables case escalation to get expedited to the previous quarter hour slot. The setting is activated for the organization as a whole and is used to ensure that customer **Service Level Agreements (SLAs)** are met.

The early triggers on the escalation box allow you to specify whether cases should escalate sooner than the **Age Over** time specified.

As an example, let's say that the escalation logic is currently running on the hour and the escalation triggers are fired every 15 minutes.

Now, say, a case is created at 16:16 and the **Escalation Rule** is set to trigger after one hour; the case will not be escalated until 17:30 because it missed the 17:15 escalation trigger by one minute. This can be an issue when precise escalation is required and hence, by enabling early triggers, this issue can be eliminated.

To enable the early triggers in the escalation box, navigate to **Setup | Customize | Cases | Support Settings**. Now, click on **Edit** and set the **Early Triggers Enabled** checkbox as shown next, and then click on the **Save** button.

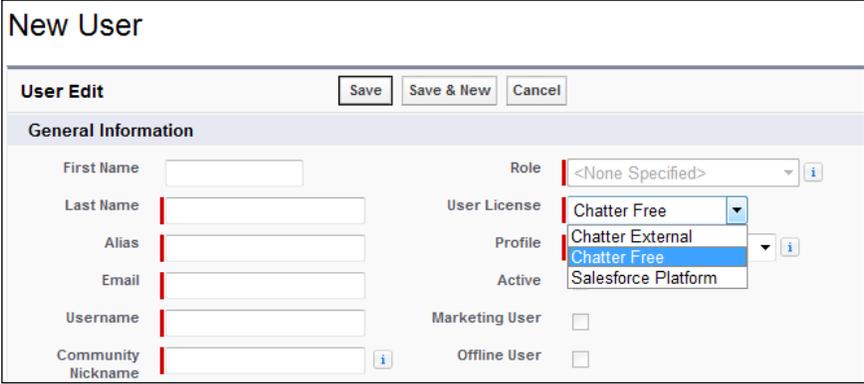
The screenshot shows the 'Support Settings' configuration page. At the top right, there are 'Save' and 'Cancel' buttons. The page title is 'Support Settings'. Below the title, there are several settings:

- The default owner of a case when assignment rules fail to locate an owner.** This setting is set to 'User' with a dropdown menu and 'Paul Goodey' in a text field. There is a 'Notify Default Case Owner' checkbox which is unchecked.
- The user listed in the Case History related list for automated case changes from:** This section lists 'Assignment rules', 'Escalation rules', 'On-Demand Email-to-Case', and 'Cases logged in the Self-Service portal'. The 'Automated Case User' is set to 'Paul Goodey'.
- Use this template to notify contacts that a case has been created or updated for them.** The 'Case Creation Template' is set to 'Support: Case Created (f'.
- Use this template to notify your users a case has been assigned to them.** The 'Case Assigned Template' is set to 'Support: Case Assignme'.
- Use this template to notify contacts that a case has been closed.** The 'Case Close Template' is currently empty.
- Use this setting to specify whether contacts who are not members of your Self-Service portal should receive case comment notifications.** The 'Enable Case Comment Notification to Contacts' checkbox is unchecked.
- Use this setting to notify case owner when a comment is added to a case.** The 'Notify Case Owner of New Case Comments' checkbox is unchecked.
- Use this setting to enable early triggers on escalation rules.** The 'Early Triggers Enabled' checkbox is checked and highlighted with a red box.

Salesforce Chatter

Salesforce Chatter is an enterprise social networking application that helps users connect to people and share business information. It can be accessed from the App Menu in the top-right corner of the Salesforce CRM screen. Chatter feeds can also be accessed from within the Salesforce CRM record pages. All users with a Salesforce license have access to Chatter, plus you can create new users who do not have Salesforce licenses but wish to have access to Chatter. These user licenses can access Chatter people, profiles, groups, and files. However, they cannot access any Salesforce object data.

Chatter Only user licenses can be created for users within your company, which are known as **Chatter Free**, plus employees not in your organization such as customers, known as **Chatter External**. These are shown in the following screenshot:

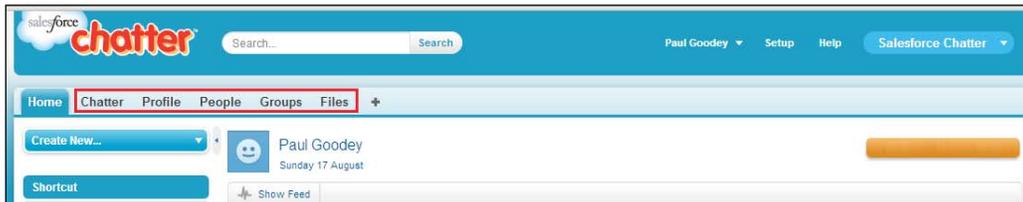


The screenshot shows the 'New User' form in Salesforce CRM. The form is titled 'New User' and has a 'User Edit' section with buttons for 'Save', 'Save & New', and 'Cancel'. Below this is the 'General Information' section, which contains several fields for user details. The 'Role' field is set to '<None Specified>'. The 'User License' field is set to 'Chatter Free'. The 'Profile' field is set to 'Chatter Free', with a dropdown menu open showing 'Chatter External', 'Chatter Free', and 'Salesforce Platform'. The 'Active' field is checked. The 'Marketing User' and 'Offline User' fields are unchecked. The 'Community Nickname' field has an information icon.

Another Chatter license (not shown in the preceding **User License** selection) is the **Chatter Only** license. This license is also known as **Chatter Plus** and is for users who do not have Salesforce licenses but require access to some Salesforce objects in addition to Chatter. This provides access to Chatter people, profiles, groups, and files, plus the viewing of Salesforce accounts and contacts and the ability to modify up to 10 custom objects.

 You can upgrade a user's **Chatter Free** license to a standard Salesforce license whenever you wish; however, you cannot change a standard Salesforce license or **Chatter Only** license for a user to a **Chatter Free** license.

As mentioned previously, Salesforce Chatter can be accessed from the App Menu by selecting the Salesforce Chatter option within which these tabs are available: **Chatter**, **Profile**, **People**, **Groups**, and **Files**, as shown in the following screenshot:



These tabs are available in the Chatter app by default; however, you can also add these tabs to other apps if required.

Chatter primary features

The primary features discussed in this section exist in Salesforce Chatter.

Feed

A Chatter feed is a list of recent activities in Salesforce and are displayed on:

- The **Chatter** tab and **Home** tab. Here, users can see their posts, posts from people they follow, updates to records they follow, and posts to groups they are a member of.
- Profiles, where users can see posts made by the person whose profile they are viewing.
- Records, where users can see updates to the record they are viewing.
- Chatter groups, where users can see posts to the group they are viewing.

Post

A Chatter post is a top-level comment in a Chatter feed.

Invitations

As the name suggests, a Chatter invitation is the mechanism to send an invite by e-mail to coworkers (either with or without a Salesforce license) or people outside your company (such as customers).

Chatter settings

Chatter settings provide options for feeds, posts, and invitations. We will first look at the setting to enable Chatter, and then, in the following sections, we will look through the various settings that you can apply for Salesforce Chatter.

Enabling Chatter

Enabling Chatter also enables the new user interface theme, which updates the look and feel of Salesforce.

 Chatter is enabled by default for organizations created after June 22, 2010. For existing organizations, you must enable Chatter, as shown shortly.]

When Chatter is enabled, the global search feature which allows searching across Salesforce, including Chatter feeds, files, groups, and people is activated.

 Where there are 15 or fewer users, all users automatically follow each other when Chatter is enabled.]

The selection of the Salesforce Chatter options can be carried out by navigating to **Setup | Customize | Chatter | Settings**, as shown in the following screenshot:

Chatter Settings
[Help for this Page](#)

Chatter is a corporate network that lets your users work together, talk to each other, and share information, all in real time.

Chatter Settings Required Information

Turn on Chatter and Global Search features. We have given you a head start—your users may auto-follow a few people or records by default and your search box is in the header. [Learn More...](#)

Enable

Groups

Modify Chatter group settings.

Allow Group Archiving ⓘ

Rich Link Previews in Feed

Show rich content in the feed. Convert links in posts into embedded videos, images, and article previews. Rich content is provided by Embed.ly, a third-party service. Previews are only available for links to supported sites. We don't share any private content with Embed.ly, just the URL.

Allow Rich Link Previews

Approval Posts

Allow users to receive approval requests as posts.

Allow Approvals

Coworker Invitations

Open up your corporate network for free! Allow Salesforce.com users to invite coworkers without Salesforce.com licenses to Chatter. Users who accept invitations see only profiles, files, and groups, but can't see any object details unless you grant them a full Salesforce license.

Allow Coworker Invitations

[Send invitations from your email account.](#)

Company Email Domains	widgetxyz.co.uk widgetxyz.com
-----------------------	----------------------------------

Customer Invitations

Allow users to invite customers to groups they own or manage. Customers can be invited from outside your email domains, can only see information in groups they're invited to, and can only interact with members of those groups.

Allow Customer Invitations

File Sync

Allow users to sync files.

Allow File Sync

Publisher Actions

Add actions you create to the publisher on the home page, Chatter tab, and record detail pages. With this setting enabled, you can also customize the order in which all actions appear, including Post, File, Link, and Poll.

Enable Publisher Actions

Let's look at each of the Salesforce Chatter setting options.

Chatter Settings – enabling Chatter

Select the **Enable** checkbox to turn on Chatter and the global search features.

The Groups option

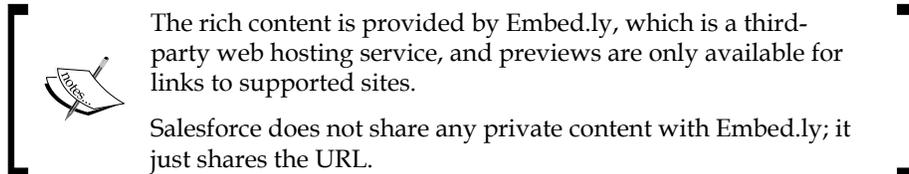
The Group option allows you to modify Chatter group settings. By selecting **Allow Group Archiving**, you will allow automatic and manual archiving of groups.

[
]

Groups can be activated even if this feature is not enabled.

The Rich Link Previews in Feed option

Select the **Allow Rich Link Previews** checkbox to display rich content in the Chatter feed. By enabling this option, links in posts are converted into embedded videos, images, and article previews.



The Approval Posts option

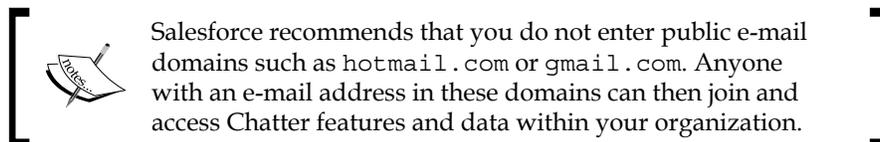
Select the **Allow Approvals** checkbox to permit users to use Chatter posts within Salesforce Workflow approval processing. By enabling this option, users can approve any business process from within their Chatter feed.

The Coworker Invitations option

Select the **Allow Coworker Invitations** checkbox to enable everyone in your company to access Chatter. This allows all colleagues, even those who do not have Salesforce licenses, to collaborate using Salesforce Chatter.

Invited users can access Chatter people, profiles, groups, and files but cannot access Salesforce records unless they have a Salesforce license. To make Chatter available for company colleagues, you can either manually add Chatter users or use the **Invitations** option.

Starting in June 2011, invitations are automatically turned on for new organizations and the the **Company Email Domains** field is populated based on the first user's e-mail address.



You must provide at least one e-mail domain, and you can add a maximum of 200 domains. The domains that you enter should be those used in e-mail addresses within your company.



As security, the **Allow Coworker Invitations** checkbox will not be activated if the domain is a free e-mail provider such as yahoo.com, gmail.com, and so on

The Customer Invitations option

Select the **Allow Customer Invitations** checkbox to permit users to invite people from outside your company network.

The File Sync option

The File Sync option allows users to access files saved in their Salesforce Files folder on their desktops from the Synced filter on the **Files** tab in Chatter and in Salesforce Mobile (covered in *Chapter 10, Mobile Administration*).

Your users need to install a desktop client called `Salesforce Files`. They can then securely store, sync, and share files between Chatter, their desktops, and mobile devices.



Limits apply when using the `Salesforce Files` client: 10 GB is the maximum amount of data that individual users can sync in their `Salesforce Files` folder. Should the folder reaches this limit, new files will not sync until other files are deleted from the folder. 500 MB is the maximum size of file that can be uploaded using the `Salesforce Files` folder.

The Publisher Actions option

The Publisher Actions (or simply Actions) option lets you create actions and add them to the Chatter publisher on the home page, on the **Chatter** tab, in Chatter groups, and on record detail pages. Actions also appear in the action tray in Salesforce1.

Actions can be set up to provide your users with the option to create or update records and log calls directly in the Chatter feed or from users' mobile devices. Actions can be regular actions, such as create and update, or you can configure and develop custom Actions based on your company's needs.

The following lists the various types of actions:

- **Standard actions:** These are automatically included when Chatter is enabled, for example, **Post**, **File**, **Link**, and **Poll**. Here, you can customize the order in which these appear, but you can not edit their properties.
- **Create actions:** These allow users to create records. You can choose the fields used in Create actions and when the record is saved, or when any validation rule or mandatory field is fired.
- **Log a call actions:** These permit users to enter the details of phone calls where these call logs are saved as completed tasks.
- **Send email actions (only available on Case records):** These provide a Case Feed E-mail action on Salesforce1 Mobile (albeit at the time of writing this, it's a simplified version of the Case Feed E-mail function).
- **Update actions:** These let users amend a record from the feed associated with the record.
- **Question actions:** These let users ask and search for questions about the record.
- **Custom actions:** These are an extended functionality developed with Visualforce pages or canvas apps.

Feed tracking

When you enable feed tracking, users will see updates for the objects and records that they follow in their Chatter feed. Many objects and fields are tracked by default, but you can further customize feed tracking to include or exclude specific objects and fields.

You can set feed tracking for users, Chatter groups, and these standard objects: accounts, assets, campaigns, cases, contacts, contracts, dashboards, events, leads, opportunities, products, reports, solutions, and tasks. You can also configure feed tracking for custom objects.

The selection of the **Salesforce Feed Tracking** options can be carried out by navigating to **Setup | Customize | Chatter | Feed Tracking** (as shown in the following screenshot).

Feed Tracking [Help for this Page](#)

Enable feed tracking for objects so users can follow records of that object type. Select fields to track so users can see feed updates when those fields are changed on records they follow.

Object	Tracked
Account	2 Fields
Ad Group	
Additional Review Point	
Aftercare	
Alertable Temperament Condition	
Assessment	
Asset	
Breed	
Breed Colour	
Business Unit	
Campaign	
Case	3 Fields
Chatter Group	7 Fields
Code Debt	
Contact	5 Fields
Contact Address	
Contact Dog Match	
Contact Equipment	
Contact Movement	
Contact Role	
Contact Role Allowance	
Contact	0 Fields

Fields in organisations

Save Cancel Enable Feed Tracking [Restore Defaults](#)

You can select up to 20 fields.

Account Name <input checked="" type="checkbox"/>	Account Number <input type="checkbox"/>
Account Owner <input checked="" type="checkbox"/>	Account Site <input type="checkbox"/>
Account Source <input type="checkbox"/>	Annual Revenue <input type="checkbox"/>
Billing Address <input type="checkbox"/>	Data.com Key <input type="checkbox"/>
Description <input type="checkbox"/>	Employees <input type="checkbox"/>
Fax <input type="checkbox"/>	Industry <input type="checkbox"/>
Location Type <input type="checkbox"/>	Ownership <input type="checkbox"/>
Parent Account <input type="checkbox"/>	Phone <input type="checkbox"/>
Rating <input type="checkbox"/>	SIC Code <input type="checkbox"/>
SIC Description <input type="checkbox"/>	Shipping Address <input type="checkbox"/>
Status <input type="checkbox"/>	Ticker Symbol <input type="checkbox"/>
Type <input type="checkbox"/>	Website <input type="checkbox"/>
_SYSTEM: AccountType <input type="checkbox"/>	_SYSTEM: IsIndividual <input type="checkbox"/>
_SYSTEM: One2OneContact <input type="checkbox"/>	

Save Cancel Enable Feed Tracking [Restore Defaults](#)

Chat settings

The chat settings feature allows users to chat with people they follow in Chatter without having to use external chat clients.

The selection of the **Salesforce Feed Tracking** options can be carried out by navigating to **Setup | Customize | Chatter | Chat Settings** (as shown in the following screenshot).

Chat Settings [Help for this Page](#)

Let users chat with people they follow in Chatter without using external chat clients.

[Edit](#)

Chat Settings ! = Required Information

Allow users to chat. Chatter must be enabled.

Enable Chat

Visualforce Settings

Allow a chat widget to be included in custom Visualforce pages.

Allow

[Edit](#)

In the **Chat Settings** section, select the **Enable Chat** checkbox to permit users to use the chat facility directly in Salesforce CRM.

In the **Visualforce Settings** section, select the **Allow** checkbox to permit developers and administrators to include the chat widget within custom Visualforce pages.

Influence

The Influence setting allows you to control how much activity users must have before they are included in influence-level calculations.

The selection of the **Salesforce Feed Tracking** options can be carried out by navigating to **Setup | Customize | Chatter | Influence** (as shown in the following screenshot).

Influence [Help for this Page](#)

Activity Thresholds ! = Required Information

Do you want to control how much activity users must have before they're included in the influence level calculations? Users who don't meet all three minimums are considered observers and aren't counted when calculating the relative rank of people in your organization. **Use caution** when setting new thresholds because users' influence levels can change immediately.

Posts & Comments !

Comments Received !

Likes Received !

[Save](#) [Cancel](#)

Chatter e-mail settings

The Chatter e-mail setting allows you to apply custom e-mail branding for Chatter e-mails and control whether your users are able to receive e-mails and send posts using e-mail.

The options for the **Chatter Email Settings** can be set by navigating to **Setup | Customize | Chatter | Email Settings**, as shown in the following screenshot:

Chatter Email Settings [Help for this Page](#)

Allow users to receive Chatter emails, apply custom branding, and more.

General Settings

Allow Emails ⓘ

Allow Email Replies

Allow Posts via Email

Sender

From Name

Email Address

Branding

Logo ⓘ

150 x 50 pixels or less on a transparent background is best.

Footer Text

We strongly recommend including your company's physical address to comply with applicable anti-spam laws.

E-mail notifications

The following are the steps to permit users to receive and reply to the e-mails:

- Select the **Allow Emails** checkbox to permit users to receive personal Chatter e-mail notifications
- Select the **Allow Email Replies** checkbox to permit users to reply to Chatter posts by e-mail

Summary

In this chapter, we looked at the functional areas within Salesforce CRM where we described the process from campaign to customer and beyond. We saw how leads in Salesforce CRM can be converted to generate the accounts, contacts, and opportunity records that will be processed through the sales cycle to form customer records; we also saw how these customers can be supported by the customer service and support teams using the case management features.

Within the functional areas, there are various touch points where the business teams concerned with marketing, sales, and customer service have to agree on roles and responsibilities for aspects of the business processes. Salesforce has developed Salesforce Chatter, which is a collaboration application that helps in this respect by connecting people and sharing business information.

In the next chapter, we will look at the ways in which the Salesforce CRM platform can be extended further through the use of customization technologies, such as Visualforce, where you can leverage further benefits for your organization and enhance the system without the need for expensive IT development resources.

8

Extending Salesforce CRM

In this chapter, we will look at how to extend the functionality of the Salesforce CRM application and move beyond the standard pages and functionalities that we have looked at so far. Here, we will cover:

- Enterprise mash-ups in web applications
- Mash-ups in Salesforce CRM
- Introduction to Visualforce
- Creating an example mash-up with Visualforce
- An overview of Visualforce controllers
- Introduction to Apex code and triggers

An overview of the technologies and techniques that allow advanced customization will be presented, which will help you gain an understanding of the features and considerations required to create web mash-ups in your Salesforce CRM applications.

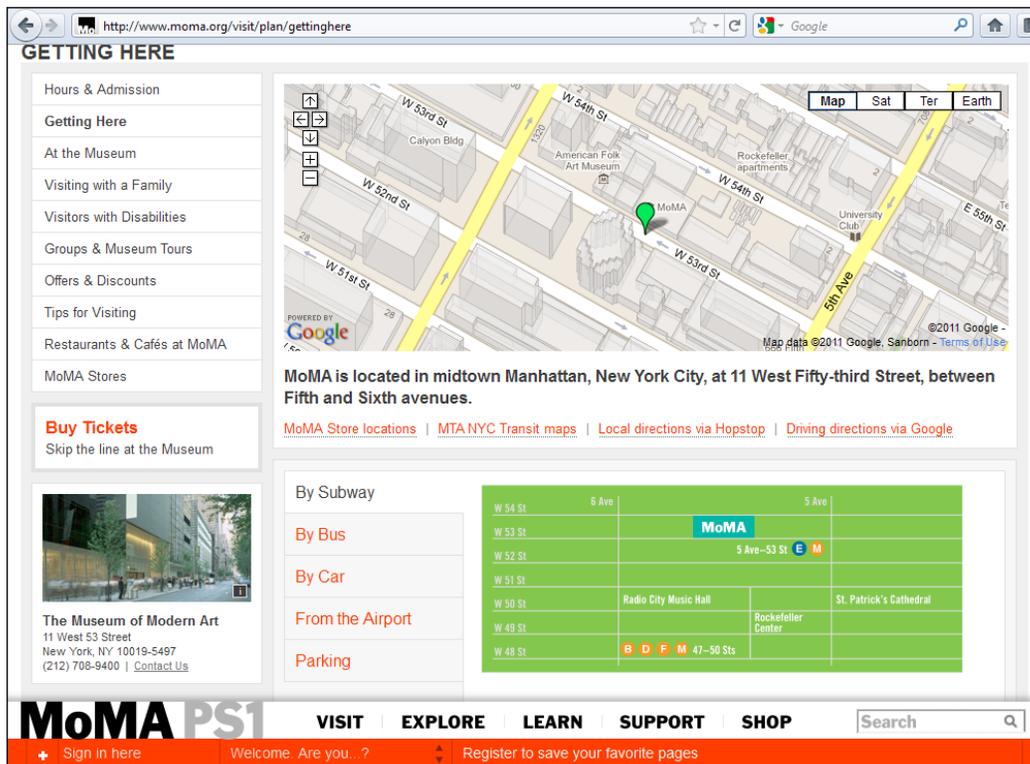
You will discover how, with use of the platform and technologies such as Visualforce, you can extend the core functionality of the application and leverage significant benefits for your organization as well as how to enhance the system without the need for expensive IT development resources.

Enterprise mash-ups in web applications

A **mash-up** is a general term that is commonly used to describe the merging of functionality and content from multiple sources. It is typically applied to describe the merging of web applications where the sources might often use a different technology to provide the service or application but as part of the distinction for a web application mash-up; the common feature that provides connectivity is the Internet.

The connections between the various sources might require different levels and complexities of integration depending on whether the associated information or content is to be simply viewed or whether it is also to be amended, and therefore, whether data is to be distributed across the various systems. When mash-ups first started appearing on the Web, they were quite simply created to enable the viewing of content from another web source within an Internet browser and did not transfer any data or functionality between the source systems.

An example of such a mash-up is a website that displays a *how to find us* type of page within one of its web pages, such as the contact page. Within the HTML code, there might be an embedded piece of functionality showing a static Google map or a similar web control, as shown in the following screenshot:



This type of mash-up is an example of a simple client-side mash-up, where the connectivity occurs inside the web browser. This coding inside the web page provides a way to combine static information from multiple Internet sources and generate an elegant visual presentation.

As mash-ups have evolved, far more complex functionality can now be achieved. It is possible to have sophisticated integration between web applications where information and functionality are seamlessly shared. As you might expect, this requires more complex coding to achieve and also may require the use of server-side infrastructures. We will look at the distinction between the client-side and server-side mash-ups shortly.

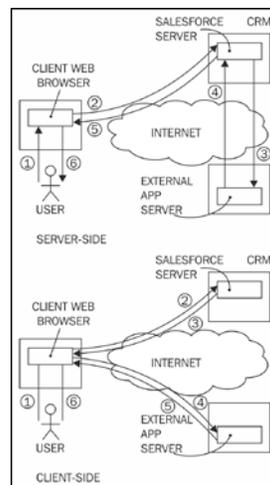
Mash-ups in Salesforce CRM

Mash-ups in Salesforce CRM might seem daunting at first, especially if you are less familiar with Internet scripting technologies such as HTML, but certain types of mash-up can be accomplished by most people and do not require professional software developers or the IT team.

[ HTML is the main markup language that creates web pages and other information that can be displayed in a web browser (<https://en.wikipedia.org/wiki/HTML>).]

Before we start out, it is always useful to first evaluate how and where the mash-up needs to be done, and in particular, the type of data and service that is to be mashed up. Once this is understood, you can then begin to consider the coding effort and plan the resources required to implement them.

To understand the flavor of mash-ups as far as Salesforce CRM is concerned, and as suggested, there are two main categories of mash-up development at a high-level, and these can be classed as either server side or client side, as shown in the following diagram:



Looking at the preceding diagram, we see that the server-side mash-up goes through the following high-level steps:

1. The user makes a page request to Salesforce CRM using his/her web browser.
2. The web browser calls the Salesforce CRM servers, which invoke custom Apex code.
3. The custom Apex code in Salesforce CRM calls a function on an external application server.
4. The external application returns the response to Salesforce CRM.
5. Salesforce CRM processes the response and returns the details to the user's web browser.
6. The user's web browser finally presents the overall response to the user.

Client-side mash-ups are far more simple, as they use the browser to link the requests and responses required for the mash-up, where the following typical high-level steps can be considered:

1. The user makes a page request to Salesforce CRM using his/her web browser.
2. The user's web browser requests details from Salesforce CRM.
3. Salesforce CRM returns the response to the user's web browser.
4. The user's web browser requests details from the external application.
5. The external application returns the response to the user's web browser.
6. The user's web browser finally presents the overall response to the user.

As indicated, server-side mash-ups often require sophisticated coding and external infrastructure, which is generally provided by the IT resources. As this book does not aim to be a resource for developers, we will look at server-side technology at a high level but will not go into the details.

We will, however, cover the use and provide some step-by-step instructions on how you can compose client-side mash-ups as well as the tools that are available within your Salesforce CRM application.

Server-side mash-ups

By way of introduction, and for the sake of completeness, the upcoming section describes the core features of external server-side mash-ups. We will briefly look, in a little more detail, at the capabilities, features, and implications associated with the use of server-side mash-ups.

Server-side mash-ups are a specific example of an external services mash-up. This is where external systems can either serve the request for data from Salesforce as a client or use data presented by Salesforce and mash the composite data in an external system.

These mash-ups typically use web services and are most often provided by organizations using web APIs, which describe how the service can be accessed by a client application over the Internet and are executed on the remote system that is hosting the service.

A more formal definition of a web service is provided by the **World Wide Web Consortium (W3C)**, which as detailed on their web page (<http://www.w3.org>), is an international community where member organizations, full-time staff, and the public work together to develop web standards.

The definition of a web service by the W3C is (<http://www.w3.org/TR/ws-gloss/>):

A Web service is a software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format (specifically WSDL). Other systems interact with the Web service in a manner prescribed by its description using SOAP-messages, typically conveyed using HTTP with an XML serialization in conjunction with other Web-related standards.

Although the web service definition for the machine-to-machine interaction by the W3C refers to machine-to-machine interaction using **Simple Object Access Protocol (SOAP)**, there is another protocol that is becoming increasingly popular today, known as **Representational State Transfer (REST)**. This is mentioned for information only, and we will not go into any further detail about web services in this book.

Client-side mash-ups

Within Salesforce CRM, there are typically two types of client-side mash-ups, namely client-side services mash-ups and client-side presentation mash-ups.

Client-side services mash-ups

Similar to server-side mash-ups, client-side services mash-ups can also be used to call web services or consume websites and feeds. They can be used to invoke the Salesforce CRM web services API from within the browser. Client-side services mash-ups require more complex programming than client-side presentation mash-ups and typically rely on the technologies associated with web services.

Client services mash-ups and external services mash-ups are useful to organizations that need to access information from various systems that usually serve a business data process and interact in real time. Specifying and developing these types of mash-ups needs to be carefully evaluated to determine the required effort and resources.

Client-side presentation mash-ups

Client-side presentation mash-ups are the least complex mash-ups and can be composed relatively quickly. Here, live data and functionality from multiple sources are embedded on a web page, which requires data from the Salesforce platform with you can mash up with the non-Salesforce data and functionality.

Client presentation mash-ups in Salesforce can be composed using Visualforce, HTML, and JavaScript, which can often be copied and pasted by nontechnical users and can immediately add value to a web application.

Having briefly outlined the nature of client-side mash-ups, we are now going to look at how they can actually be created in Salesforce CRM. As shown earlier, the enabling technology is provided by the Salesforce platform with the use of the web page framework known as Visualforce.

The best way to guide you through the use of new technology is by demonstrating how to use it with an example. Here, we are going to compose a client-side presentation that displays a Google map widget, which displays Google map location details for a given company record in Salesforce.

The Google map will be presented to the user in Salesforce CRM after selecting an appropriate account record, and live Google map information will be displayed right from within the relevant account detail page. The mash-up will be composed by creating a new Visualforce page with the required Google map widget and then adding a new section to the account detail page where the Visualforce page will be included.

Introduction to Visualforce

Visualforce is the framework in Salesforce CRM that allows you to further customize your organization's user interface beyond the standard functionality that we have previously covered.

As described previously, using Visualforce, you can combine data from multiple objects, create mash-ups with data from external web services, and even override some of the logic and the behavior found within standard Salesforce CRM application functions. Visualforce consists of the following three elements:

- **Visualforce pages:** These are used to define the user interface
- **Visualforce components:** These can be thought of as a library of standard or custom-built sections of Visualforce code
- **Visualforce page controllers:** These are used to control the behavior of Visualforce pages, and can either be controlled by standard logic, or you can create custom logic to change or extend the standard Salesforce CRM behavior

Visualforce pages

The Visualforce framework allows for the creation of Visualforce pages. These pages are a little like documents that are stored in Salesforce and are comprised of instructions that specify how the page is to appear and function. Similar in nature to HTML, Visualforce pages comprise of a tag-based markup language, with each Visualforce tag type corresponding to a particular user interface component.



The maximum size of a Visualforce page cannot be greater than 15 MB.

For the more technical readers, Visualforce performs similar functions such as, say, **Java Server Pages (JSP)** or **Active Server Pages(ASP)**, and is used to manage the retrieval of the data from the Salesforce platform and the rendering of results via the Internet browser user interface.

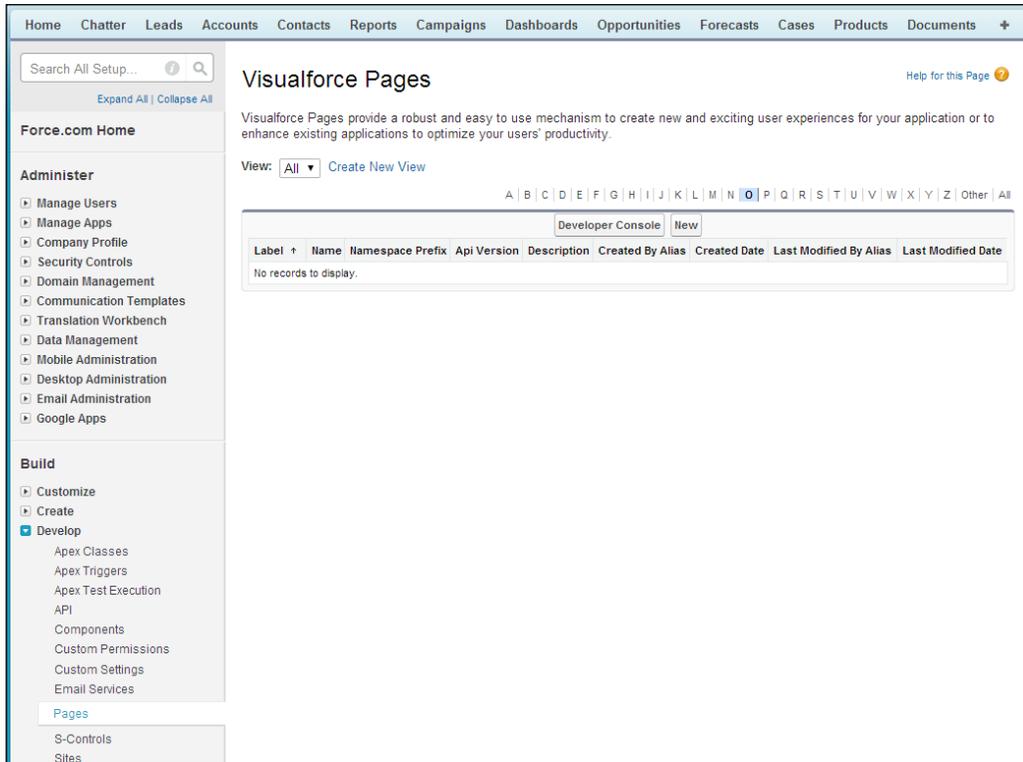
Creating a Visualforce page

Now that you are aware of the basic building blocks provided by Visualforce, we will describe the creation of Visualforce pages. This section looks at how the creation and modification of pages can be done and shows you the following two ways of doing that:

- Using the Visualforce pages setup page
- Using the development mode

Visualforce pages setup page

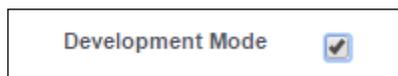
To go to the setup page to create Visualforce pages, navigate to **Setup | Develop | Pages**. Now, click on the **New** button to create a new Visualforce page. Select an existing entry to view the page, or click on **Edit** to modify it, as shown in the following screenshot:



The Visualforce development mode

We can also use something called the Visualforce development mode to create and edit Visualforce pages initially. This can be a better choice because it provides several useful features that make it easier to build Visualforce pages.

To start using the development mode, you need to activate it on your user record by navigating to **Your Name | My Settings | Personal | Advanced User Details**. Now, click on the **Edit** button, select the **Development Mode** checkbox (as shown in the following screenshot), and then finally, click on **Save**.



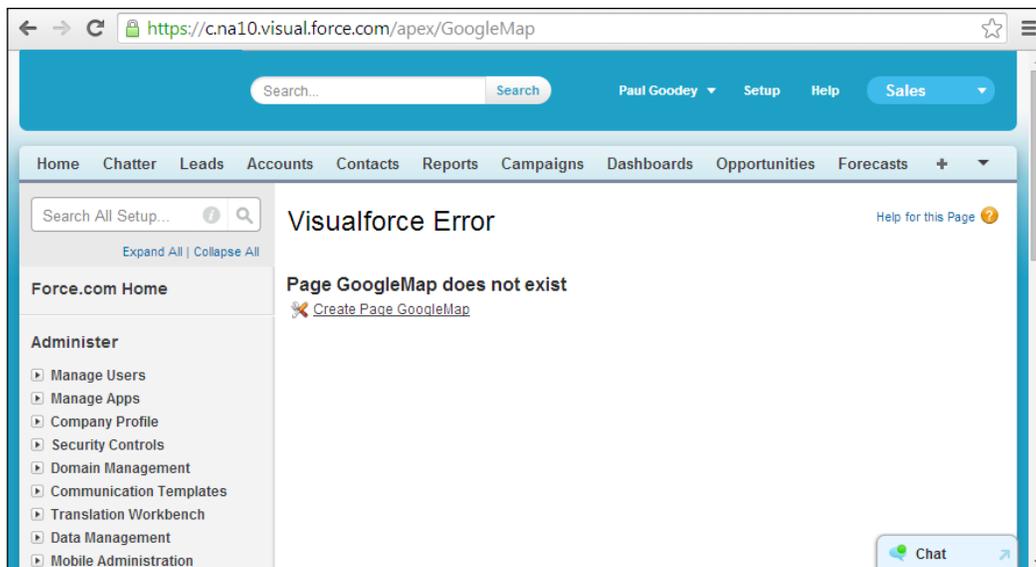
When in the Visualforce development mode, you can create a new page simply by entering a unique URL into the browser's address bar.

Automatic creation of new Visualforce pages

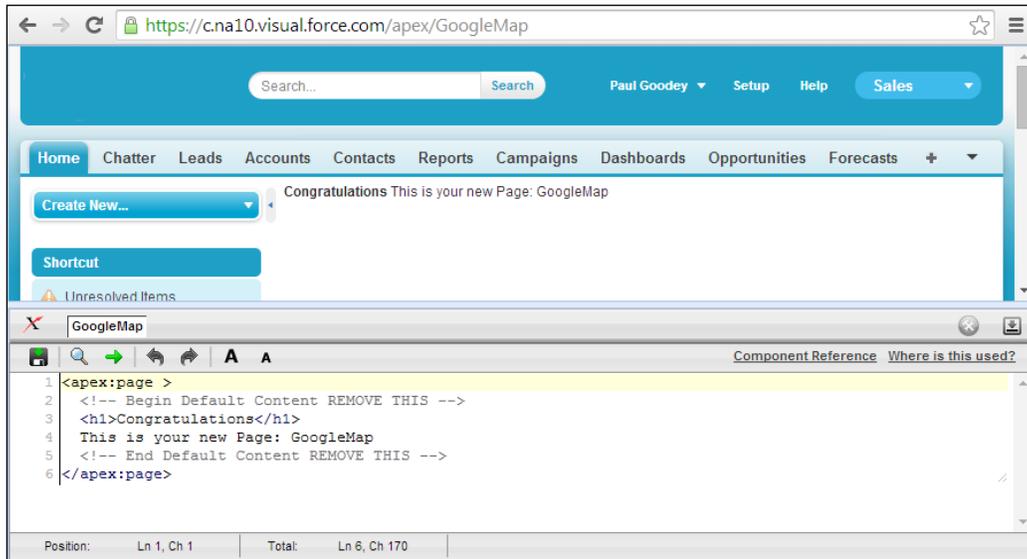
By entering a unique URL (for a Visualforce page that does not exist) into the browser's address bar, a new page called will be created. For example, typing the URL `https://na10.salesforce.com/apex/GoogleMap` will enable a new page called `GoogleMap` to be created.

You need to be careful about entering the correct URL text, as it is the `/apex/GoogleMap` part in the preceding example that prompts Salesforce CRM to check and create the new page if it does not currently exist. It is also important that the start of the URL be entered correctly. The `https://na10.salesforce.com` part refers to the Salesforce instance for your Salesforce CRM application.

When entered correctly, the following screenshot, which allows you to create the Visualforce page, will be presented:



This, as you can see, can save a lot of time when creating a lot of pages, as you do not need to keep navigating to the setup sidebar section, and it saves a number of mouse clicks. The resulting edit page, when you click on the **Create Page GoogleMap** link, is the same edit page as the one accessed through the setup route, as shown in the following screenshot:



When the development mode is enabled, a development section is automatically presented below the Visualforce page that you are creating or editing, which displays an editor section. To show or hide the development section, click on the following icon:



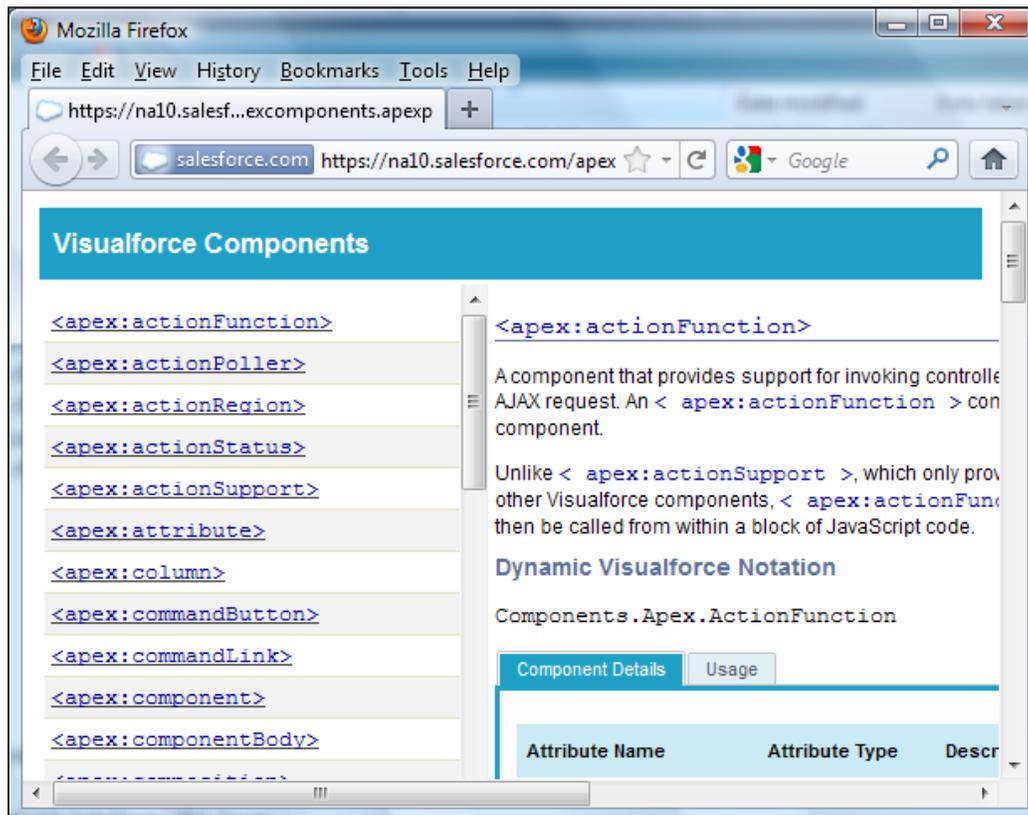
The editor allows you to write Visualforce component tags directly within the browser window and also offers the following features:



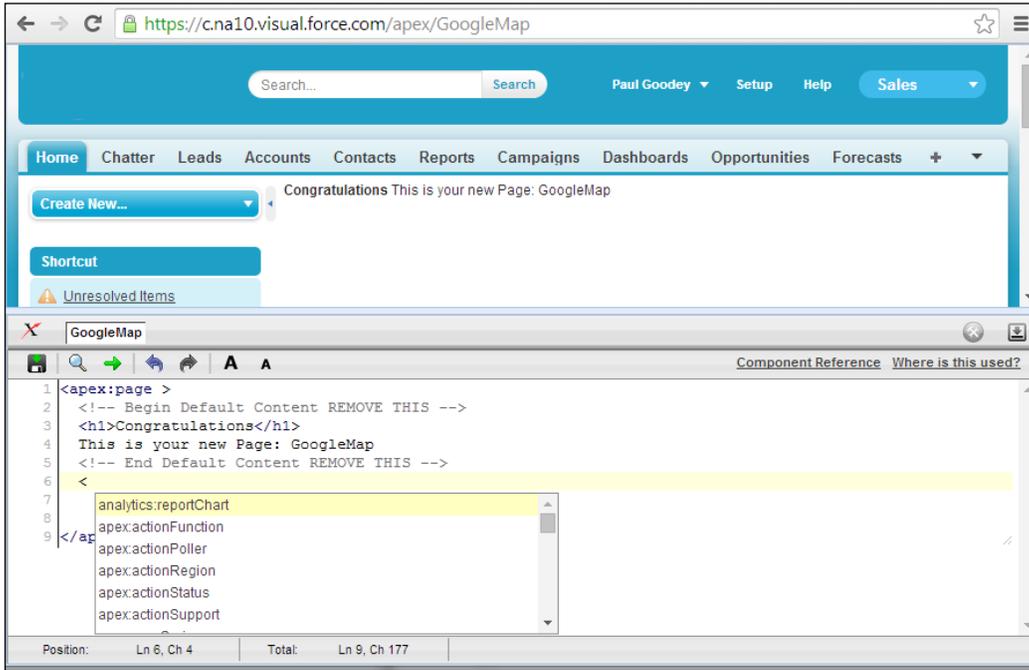
As shown, the seven menu functions are provided for the following:

- Saving the page
- Searching for text
- Navigating to a specified line in the code
- Undoing changes
- Redoing changes
- Increasing the font size of the text
- Decreasing the font size of the text

Clicking on the **Component Reference** link will navigate to the online documentation, which provides descriptions as well as example code for all the Visualforce components, as shown in the following screenshot:



In addition, the page editor also provides highlighting and an autocomplete feature that automatically displays available component markup tags, as shown in the following screenshot:



The greatest benefit of having the development mode enabled when building Visualforce pages using the Salesforce CRM platform is that as you add component tags and build up the code in the page, you can click on the save icon and view the resulting changes immediately.

 The Visualforce page must be free from errors before the page is allowed to be saved. 

Visualforce components

We have seen in the previous section that Salesforce provides a set of standard, prebuilt components, such as `<apex:actionFunction>` and `<apex:actionStatus>`, which can be added to Visualforce pages to construct pages of functionality. In addition, you can build your own custom components to augment this library of components.

Similar to the way functions work in a programming language, a custom Visualforce component allows you to construct common code and then reuse that code in one or more Visualforce pages.

Custom components allow you to define attributes that can be passed in to each component. The value of an attribute can then change the way the markup is displayed on the final page and the controller-based logic that executes for that instance of the component.

Visualforce custom components consist of Visualforce markup tags using the standard `<apex:component>` tag, and therefore, rather than repeating the Visualforce markup required for every page that you need the common code on, you can define a custom component that has certain attributes and that uses these attributes to display the functionality on the page. Once defined, every Visualforce page in your organization can leverage the custom component in the same way as a page can leverage standard components, such as `<apex:dataTable>` or `<apex:actionStatus>`.

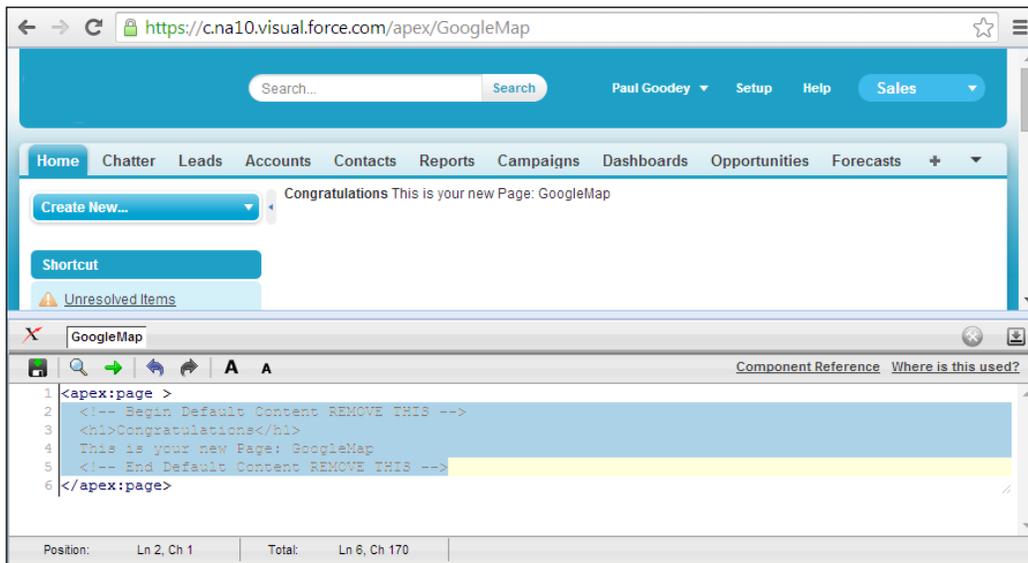
Creating an example mash-up with Visualforce

To construct our example mash-up, we will follow these steps:

1. Delete the default new Visualforce markup content.
2. Change the Visualforce Controller to specify an Account Standard Controller.
3. Copy and paste the Google map code and add Salesforce-specific merge fields

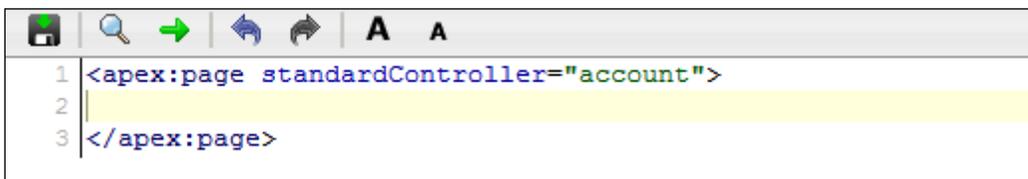
Deleting the default new Visualforce markup content

Delete the existing Visualforce page text (lines 2 to 5 in the following screenshot) and leave just the starting and ending tags, which are `<apex:page>` and `</apex:page>`, as shown in the following screenshot:



Changing the Visualforce Controller to specify an Account Standard Controller

We also need to change the Visualforce page controller so that we can read the value of the fields stored on the Account record. Controllers will be looked at in more detail later in this chapter, but for the moment, we will change the opening tag, which is `<apex:page>`, and add the `standardController` attribute, which allows the call to the Account record, as shown using the `<apex:page standardController="account">` code:



Copy and paste the Google map code and add Salesforce-specific merge fields

We will copy and paste the following code, which contains Salesforce merge fields, to render a Google map on our account records:

```
<script type="text/javascript" src="https://maps.google.com/maps/api/js?sensor=false"></script>
<script type="text/javascript">
function initialize() {
  var map;
  var mapOptions = {
    zoom: 13,
    mapTypeId: google.maps.MapTypeId.ROADMAP,
    mapTypeControl: false
  }
  var mapMarker;
  var geocoder = new google.maps.Geocoder();
  var address = "{!SUBSTITUTE(JSENCODE(Account.BillingStreet),'\r\n','')}," + "{!Account.BillingCity}," + "{!Account.BillingPostalCode}," + "{!Account.BillingCountry}";
  geocoder.geocode( {address: address}, function(results, status) {
    if (status == google.maps.GeocoderStatus.OK && results.length) {
      if (status != google.maps.GeocoderStatus.ZERO_RESULTS) {
        map = new google.maps.Map(document.getElementById("map"),
mapOptions);
        map.setCenter(results[0].geometry.location);
        mapMarker = new google.maps.Marker({
          position: results[0].geometry.location,
          map: map,
          title: "{!Account.Name} " + address
        });
      }
    } else
      document.getElementById("map").innerHTML = "Unable to find or display a map for {!Account.Name}'s billing address : " + address;
  });
}
</script>
<div id="map" style="width:100%;height:300px"></div>
<script>
  initialize();
</script>
```

We use Salesforce merge fields for the Account record to pass the billing address data to the Google map API as shown in the following snippet:

```
var address =  
"{!SUBSTITUTE(JSENCODE(Account.BillingStreet),'\r\n',' ')}", " +  
"{!Account.BillingCity}", " + "{!Account.BillingPostalCode}", " +  
"{!Account.BillingCountry}";
```



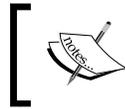
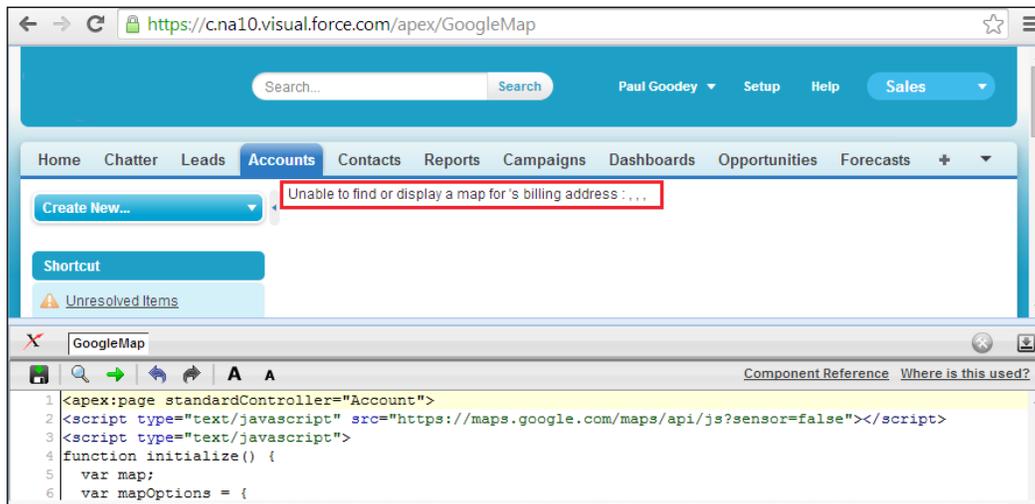
Downloading the example code

You can download the example code files for all Packt books you have purchased from your account at <http://www.packtpub.com>. If you purchased this book elsewhere, you can visit <http://www.packtpub.com/support> and register to have the files e-mailed directly to you.

The final code will appear within the Visualforce page, as shown in the following screenshot:

```
<apex:page standardController="Account">  
<script type="text/javascript" src="https://maps.google.com/maps/api/js?sensor=false"></script>  
<script type="text/javascript">  
function initialize() {  
    var map;  
    var mapOptions = {  
        zoom: 13,  
        mapTypeId: google.maps.MapTypeId.ROADMAP,  
        mapTypeControl: false  
    }  
    var mapMarker;  
    var geocoder = new google.maps.Geocoder();  
    var address = "{!SUBSTITUTE(JSENCODE(Account.BillingStreet),'\r\n',' ')}", " + "{!Account.BillingCity},  
    geocoder.geocode( {address: address}, function(results, status) {  
        if (status == google.maps.GeocoderStatus.OK && results.length) {  
            if (status != google.maps.GeocoderStatus.ZERO_RESULTS) {  
                map = new google.maps.Map(document.getElementById("map"), mapOptions);  
                map.setCenter(results[0].geometry.location);  
                mapMarker = new google.maps.Marker({  
                    position: results[0].geometry.location,  
                    map: map,  
                    title: "{!Account.Name} " + address  
                });  
            }  
        } else  
        document.getElementById("map").innerHTML = "Unable to find or display a map for {!Account.Name}";  
    });  
}  
</script>  
<div id="map" style="width:100%;height:300px"></div>  
<script>  
    initialize();  
</script>  
</apex:page>
```

When saving the Visualforce page, the page is rendered immediately; however, at this point, there is no billing address data to be passed to the Google map widget (this will be rendered properly after we have added the Visualforce page to the Account Page Layout) and therefore, an error will initially be presented, as shown in the following screenshot:



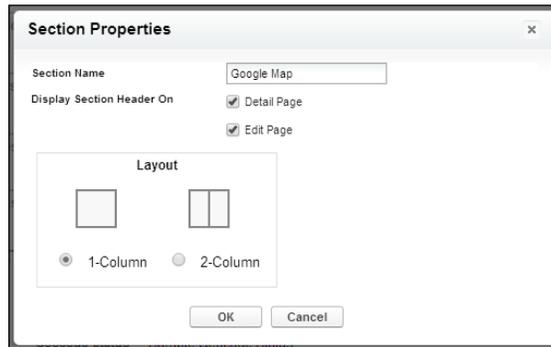
Notice how with the use of the `<apex:page standardController="account">` tag, the **Accounts** tab is now automatically highlighted.

Adding the Visualforce page to the Account page layout

Now that we have completed and saved the Visualforce page, we can add the **GoogleMap** page to the Account page layout. To add Visualforce pages to Accounts, navigate to **Setup | Customize | Accounts | Page Layouts**. Now, select the appropriate page layout. Here, we are going to add it to the page layout called **Account Layout** by carrying out the steps discussed in the upcoming section.

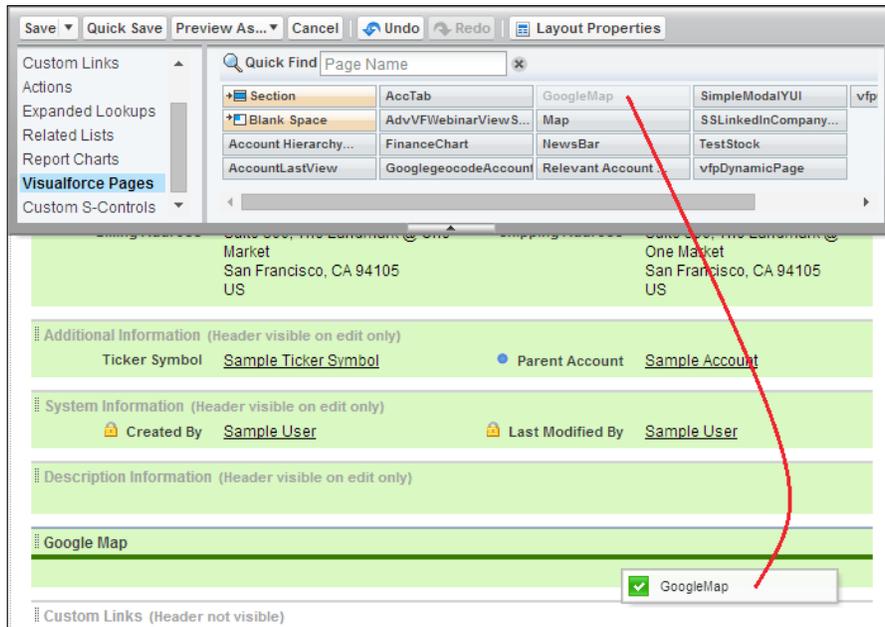
Adding a new section to the Account page layout

The new section has been given the title `Google Map` and has been set to **1-Column** width and positioned by dragging-and-dropping it below the **Account System and Description Information** section, as shown in the following screenshot:



Adding the Visualforce page to the new page layout section

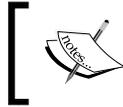
Now, drag-and-drop the `GoogleMap` Visualforce page to the **Google Map** section on the page layout, as shown in the following screenshot:



Click on **Save**; we are now ready to test by navigating to an account page.

Running the completed Visualforce page

Navigate to the **Account** tab and select an existing account to verify that the mash-up is working as expected.



You will need to ensure that a billing address is completed for the account record. The **Billing Address** composite field is a standard Account field in Salesforce CRM.

Here, we have an existing account for Salesforce.com with the **Billing Address** field populated, which displays a Google map when the account detail page is loaded, as shown in the following screenshot:

The screenshot displays the Salesforce Account Detail page for 'salesforce.com'. The page includes a header with navigation links, a 'Show Feed' button, and a 'Back to List: Pages' link. Below this, there are tabs for 'Action Plans (0)', 'Contacts (0)', 'Opportunities (0)', 'Cases (0)', 'Open Activities (0)', 'Activity History (0)', and 'Notes & Attachments (0)'. The 'Account Detail' section features buttons for 'Edit', 'Delete', and 'Include Offline'. The account information is as follows:

Account Owner	Paul Goodev [Change]	Active
Account Name	salesforce.com [View Hierarchy]	Upsell Opportunity
Parent Account		Type
Billing Address	The Landmark @ One Market Suite 300 San Francisco, California 94105 United States	Shipping Address

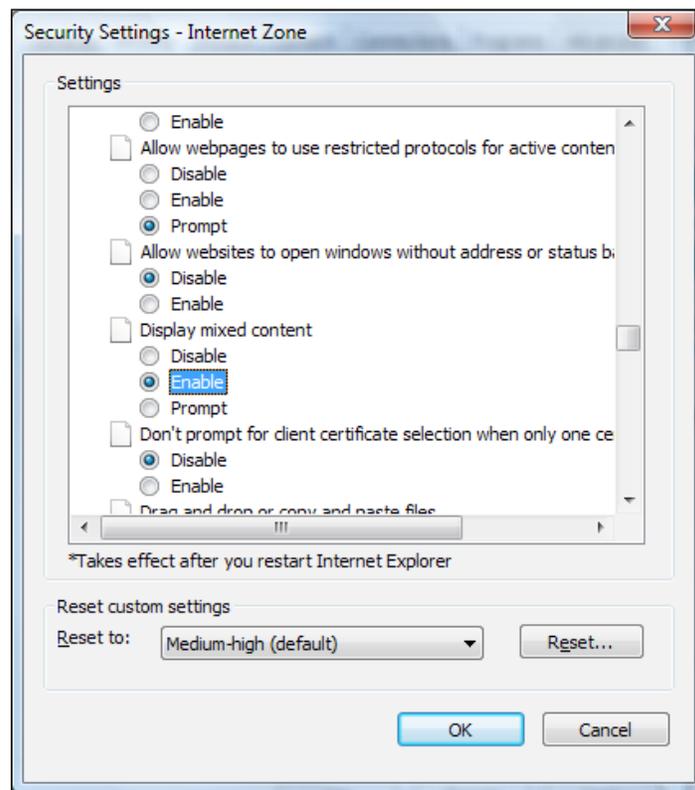
Below the account details is a 'Google Map' section showing a map of San Francisco with a red pin marking the location of the billing address. The map includes labels for streets like Marina Blvd, Lombard St, and California St, and highways like 101 and 80.

How do I suppress browser security warnings in Internet Explorer?

By default, Internet Explorer displays this security warning message when a page contains a mixture of secure (HTTPS) and nonsecure (HTTP) content: **This page contains both secure and nonsecure items. Do you want to display the nonsecure items?**



When you create a mash-up with a nonsecure URL, users might see this warning message depending on their browser security settings. To suppress this warning in Internet Explorer, follow these steps: from the Internet Explorer tools menu, select **Internet Options**, click on the **Security** tab, and click on the **Custom Level** button, and finally, in the miscellaneous section, set **Display mixed content** to **Enable**, as shown in the following screenshot:



Visualforce page controllers

As described earlier in this chapter, there are four types of controllers that can be used to control the functionality behind a Visualforce page.

Standard controllers

A standard controller provides access to standard Salesforce CRM behavior, and as shown in our client-side mash-up example, they can be specified using the following tag and attribute as the first line in the Visualforce page:

```
<apex:page standardController="Account">
```

Standard controllers are available for standard objects, such as Account, Contact, and Opportunity, as well as for custom objects and provide access to standard Salesforce CRM data operations and behavior for actions such as save, edit, and delete.

Custom controllers

Custom controllers are used for fully customized behavior and are implemented using the Visualforce tag and attribute as follows:

```
<apex:page controller="CustomAccount">
```

Controller extensions

Controller extensions are used to extend the behavior of standard controllers and allow the addition of customized functionality. Controller extensions are provided using the Visualforce tag and attribute as follows:

```
<apex:page standardController="Account"  
extensions="CustomAccountExtension">
```

Standard list controllers

Salesforce record pages allow users to filter the records displayed on the page using list views (covered in *Chapter 3, Configuration in Salesforce CRM*). For example, on the accounts home page, users can choose to view a list of only the accounts they own by selecting **My Accounts** from the list view dropdown.

Standard list controllers provide the same list view picklist and are implemented using the following tag and attribute as the first line on the Visualforce page:

```
<apex:page standardController="Account" recordSetVar="accounts">
```

Apex code

The Apex code language in Salesforce CRM is based on Java, which is one of the most popular programming languages for Internet and web-based applications, and is executed on the Salesforce platform servers.

Although based on Java, the Apex code and the Salesforce CRM platform is not a general-purpose computing platform that can be used to run any type of program that developers might choose to run. Instead, Apex is kept intentionally controlled and limited and is, therefore, designed with the needs of the business and platform in mind.

 Apex code in Salesforce is not intended to solve every programming problem and is concerned principally to help developers gain advantages in development time, code conciseness, and reduction in maintenance costs.

Apex is used in Salesforce CRM to develop the code within Custom controllers and Controller extensions as well as Apex triggers, which we will look at shortly.

Apex is specifically designed to build business applications that manage data and services, and the language provides a highly productive approach to create applications and business logic. Developers can focus on the functionality required to solve the business problem and domain and need not be concerned with building the infrastructures such as database connection and error handling, which is managed by the platform.

It should be noted that as the Salesforce CRM platform is a multitenant platform, there are certain limits as to what and how much processing can be performed within certain operations. Such limits are known as Governor Limits, and there are some restrictions and requirements; for example, Apex code must be developed in a developer or sandbox organization and must have test methods to verify each line of code, and only then is it allowed to be deployed to production.

 For successful deployment to production, Apex code must have associated unit test methods that provide at least 75 percent successful code coverage.

Apex triggers

Apex triggers are blocks of Apex code that are executed before and/or after any record action, such as create, update, or delete, in the Salesforce CRM application.

Triggers are very powerful and can include complex code to control your process. They are used for complex business logic automation and where such functionality is too complicated to be implemented using validation rules or workflow rules, such as field updates. The development of Apex triggers usually requires the resource of a software developer, as they have certain restrictions and implications for the overall system.

When using multiple triggers, and alongside any existing workflow field updates, there needs to be a thorough understanding of any dependencies to avoid any ripple effect when records are created or updated. As trigger code can make changes to the record being updated within its own operation, any likely recursion effect needs to be understood and avoided.



Apex triggers offer many benefits to an organization but also introduce some risks, as there needs to be awareness about certain patterns and limits (bulkifying triggers, governors, and so on.) imposed by the underlying platform.

It is particularly important to understand the timing, order of execution, and dependencies of the various rules and triggers within an organization.

Summary

In this chapter, we discovered how easy it is to build a mash-up in Salesforce CRM using the Visualforce technology. We looked at how, with the use of Visualforce pages, we can extend the standard page functionality of the Salesforce CRM.

We were introduced to the concepts of mash-ups concerning both the client side and server side, the difference between presentation mash-ups – which are rendered in an Internet browser – and services that require more complex features, such as web services.

We were introduced to the ways in which Visualforce pages can be controlled, where we looked at the use of Apex code, which can extend the functionality within the Salesforce CRM platform.

Finally, Apex triggers were briefly covered, where we considered the need for careful implementation to observe the order of execution for workflow rules and triggers to ensure that no unwanted ripple effects were introduced.

In the next chapter, we will look at ways to improve the experience of users in Salesforce CRM by providing additional functionality using external applications from the AppExchange Marketplace. We will outline methods to improve the **Return On Investment (ROI)** from the system, and finally, we will look at the various approaches and ways to measure user adoption in detail.

9

Best Practices for Enhancing Productivity

In this chapter, we will look at ways to improve the return on investment from the Salesforce CRM application, by adding further values and improving the experience of users in the system.

We will look at user adoption and describe ways to maximize the benefits of CRM within your organization, by introducing additional functionalities using external applications from the AppExchange Marketplace. These include the **Salesforce Adoption Dashboards** app, which is a free app provided by Salesforce through their Force.com Labs AppExchange listing.

As businesses evolve and processes change, new functionalities and information requirements are often identified. Here, we will look at the importance of planning and scheduling the release of changes to your application and provide some best practices relating to change management.

It will be seen how achieving successful user adoption can enhance your business processes and increase productivity, and the more the business's teams use Salesforce CRM, the more valuable the data and information analysis becomes.

We will discuss how successful user adoption can be achieved by empowering users and making their working lives easier. By providing users with information relevant to their daily tasks, keeping data clean and keeping functionality simple, users are not overburdened with unnecessary actions that overcomplicate and reduce productivity.

Salesforce AppExchange marketplace

The Salesforce AppExchange Marketplace is a website provided by Salesforce.com that enables organizations to select additional applications, known as apps, to add new features to their Salesforce CRM application.

Both the Salesforce CRM application and the AppExchange provide web-delivered platforms to use and build applications. This integrated web-delivered approach allows for the installation of applications and new functionalities from AppExchange into Salesforce, which is often far simpler and more cost-effective than traditional software update mechanisms. The benefits of the AppExchange are that system administrators can easily extend the Salesforce CRM application as your company's business requirements change.

There is a wealth of solutions available from the Salesforce AppExchange marketplace to help achieve most requirements. In this section, we will describe and step through the process of installing an example app.

The apps and services listed on AppExchange are provided by the Salesforce community of third-party developers and system integrators. Many of the apps are also provided by Salesforce themselves, through their team known as the Force.com Labs.

Apps can sometimes incur additional costs, but there are many that are provided for free or for a small fee. In general, apps provided by the Salesforce.com Force.com Labs team tend to be free. To access AppExchange, navigate to **Setup | AppExchange Marketplace**, as shown in the following screenshot:

Home Chatter Leads Accounts Contacts Reports Campaigns Dashboards Opportunities Forecasts Cases Products +

Search All Setup...

Expand All | Collapse All

Force.com Home

Administer

- Manage Users
- Manage Apps
- Company Profile
- Security Controls
- Domain Management
- Communication Templates
- Translation Workbench
- Data Management
- Mobile Administration
- Desktop Administration
- Email Administration
- Google Apps

Build

- Customize
- Create
- Develop
 - Schema Builder
 - Canvas App Previewer
 - Installed Packages
- AppExchange Marketplace
- Critical Updates

Deploy

- Deployment Status

Monitor

- System Overview
- Imports
- Outbound Messages

appexchange Search AppExchange Apps...

Maximize Deals, Minimize Effort
Streamline Sales Quoting & Proposals on Any Device

CPQ GET IT NOW

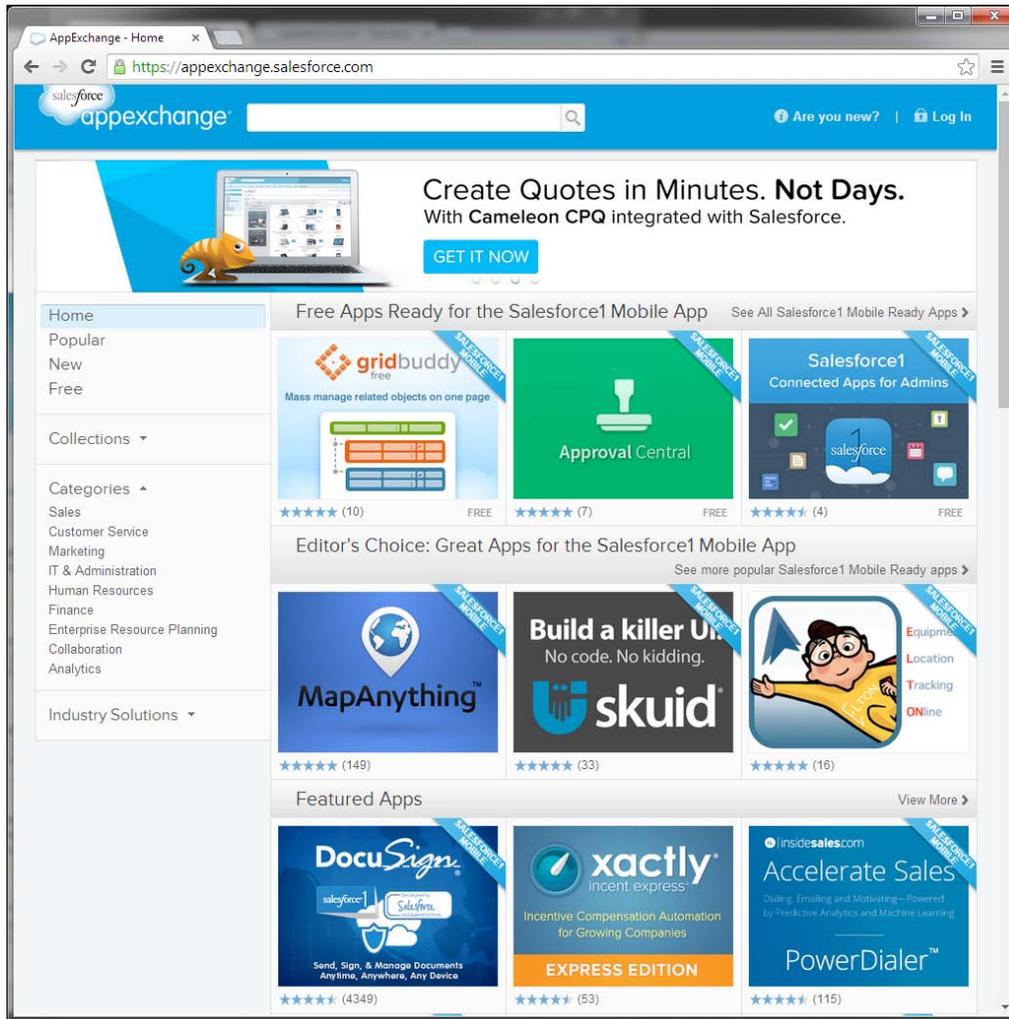
CallidusCloud

Paid Apps | Free Apps

Your Suggestions	Most Popular	New
Geopointe: Maps, Mapping, Rou... by Arrowpointe Corp... ★★★★★ (276)	Conga Composer - Generate Doc... by Conga ★★★★★ (434)	X-Maps by Pexys, Inc. ☆☆☆☆☆ (No Rating)
Conga Composer - Generate Doc... by Conga ★★★★★ (434)	DocuSign Electronic Signature... by DocuSign, Inc ★★★★★ (4349)	Firepond by FPX by FPX, LLC ☆☆☆☆☆ (No Rating)
DocuSign Electronic Signature... by DocuSign, Inc ★★★★★ (4349)	Gmail, Google Apps, Google Ca... by Cirruspath, Inc ★★★★★ (517)	SuperTRUMP for Salesforce by Ivory Consulting... ☆☆☆☆☆ (No Rating)
DupeBlocker 3 - REAL TIME De ... by CRMfusion Inc. ★★★★★ (39)	LOOP Document Services - Docu... by Drawloop Technol... ★★★★★ (181)	Resident Central: Senior Livl... by Lansdale Group ☆☆☆☆☆ (No Rating)
LinkedIn Sales Navigator for ... by LinkedIn ★★★★☆ (131)	PowerDialer for Salesforce by InsideSales.com ★★★★★ (115)	Natterbox Voice Services by Natterbox ★★★★★ (2)

View all suggestions > View all popular apps > View all new apps >

You can also access the AppExchange Marketplace website directly outside Salesforce CRM by navigating to <http://www.appexchange.com/>, as shown in the following screenshot:



As a directory, Salesforce AppExchange is similar to consumer websites, such as App Store from Apple, in the way that it seeks to provide an open, community-based channel for the distribution, retrieval, and installation of applications.

AppExchange differs, however, in that it provides not only the facilities for third-party distribution of apps, but also the listing of services by system integrators. This enables the Salesforce community to search for and review both apps and services from a central site.

Managed and unmanaged packages

Salesforce terms the collection of components and applications that are distributed through AppExchange as a package. There are two types of packages, namely managed and unmanaged.

Managed packages differ from unmanaged packages by the use of protected components that allow the managed packages to be upgraded by the developers, perhaps to add new functionality or to refactor in any changes in the Salesforce environment. By protecting certain components such as Apex Code, managed packages also serve to protect the intellectual property of the developer organization.

Unmanaged packages, on the other hand, do not protect components, and are therefore static within your organization as they cannot be upgraded by the publishing developer. They allow you to access all of the implemented customization or code and can be useful if you want to change or extend the functionality yourself.



Users with the **download AppExchange packages** permission enabled for their profile can install or uninstall the AppExchange packages from the AppExchange website.

Sometimes, the apps are distributed by **Independent Software Vendors (ISVs)**, which use the AppExchange package as a channel to advertise their presence and to showcase their range of products.

External and third-party tools

By showcasing on the AppExchange Marketplace website, ISVs often provide free apps, which help drive traffic and interest toward their core products, which in turn complement Salesforce CRM and are usually provided as web-based solutions in the same way as Salesforce.

These complementary applications are typically deployed alongside Salesforce CRM in support of a specific business process or function. For example, incentive and commission management, project management, product configuration, expense management, address checking, and so on are all examples of Salesforce apps that are available from AppExchange.

App security

Salesforce inspects all registered apps to be sure that they have no obvious security risks. However, it is worth noting that since the apps are developed by third-party providers, you should also carry out extensive testing and due diligence to eliminate any risk before installing the app into your production instance.

After an app has passed the Salesforce inspection, the core functionality and code can no longer be changed. However, custom links and web tabs are allowed to be changed because they might need to be altered after the installation. For example, simple target URLs might need to be changed from one organization to another.

You need to be aware how these links might introduce risks as part of your decision whether to trust the source of an app before installing to production. This is described in more detail in the upcoming sections.

Before installing an app

The following steps are recommended to help you understand more about the app and to determine any risks or need for further setup for your organization before actually installing the app into your production instance:

- Read specifications and reviews
- Review screenshots and customization guides
- Take a test drive

Read specifications and reviews

Before installing, read the specification associated with the app, where you will see these details: which Salesforce editions are supported, which languages are supported, component summary, and package details.

It is often worth looking at the reviews that have been left by others who have attempted to install the app. Although there is no guarantee that the reviews are 100 percent accurate and they may be subjective, it can give you an indication of the complexity of use and the successful installation of an app by other system administrators.

Review screenshots and customization guides

Most apps that have been listed on the AppExchange website provide screenshots and guides for any post-installation customization that might be required. These are useful and provide a quick indicator of whether the app will be of use to you and your organization.

Take a test drive

Apps typically offer a test drive option (especially the more complex apps), where you are directed to an external Salesforce application and can use the app as a read-only user before actually having to install it. A test drive gives you a far better way to determine whether the app is suitable for your organization before installing.

Within the test drive, you have the opportunity to check the app and its components to ensure that they are suitable and pose no security risks. For example, components such as custom links, formula fields, and web tabs can send Salesforce session IDs to external web services.



Session IDs are tokens that allow users to access Salesforce CRM without re-entering the login name and password.

Salesforce.com recommends that you check all links to external services that include a session ID merge field, because if these session IDs are shared with an external service, they expose your data, and there can be a significant security risk that need to be aware of.

Installing an app

The following steps describe the process of how to install an app into your Salesforce CRM application from the AppExchange Marketplace:

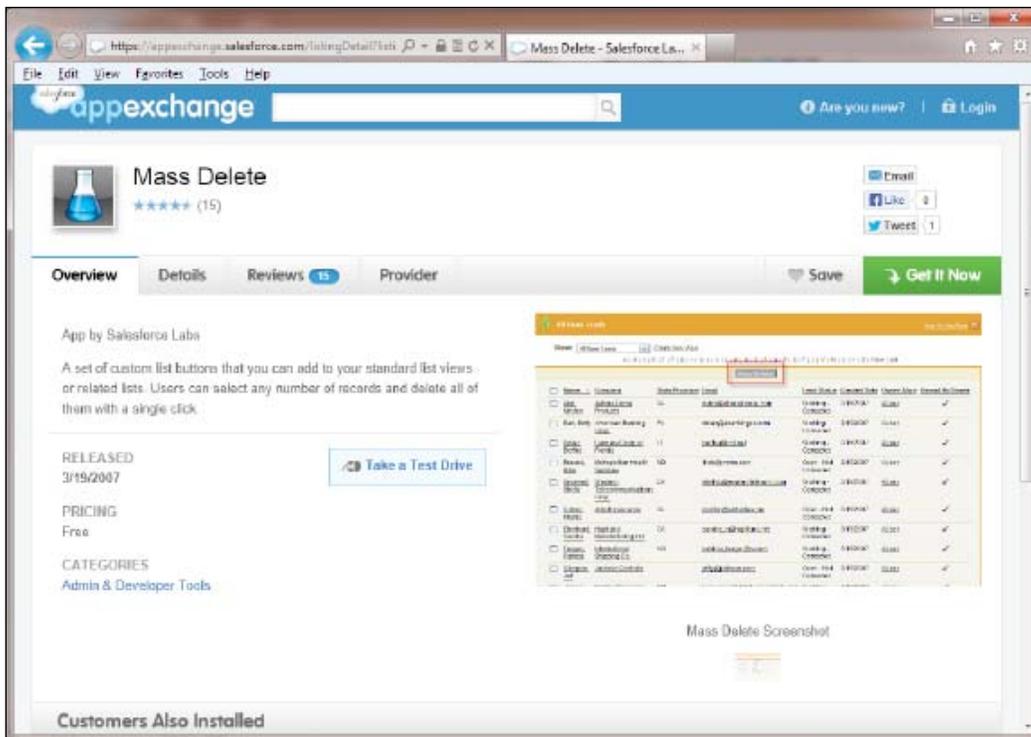
1. Get it now
2. Examine the package
3. Review the security
4. Install
5. Perform the post-installation configuration

The best way to guide you through the use of new technology is by demonstrating it with an example.

Here, we are going to install an application called **Mass Delete**, which has been developed and published by Salesforce.com's Force.com Labs team. This is a free app that provides a set of custom buttons that allow users to select any number of records and delete all of them with a single click.

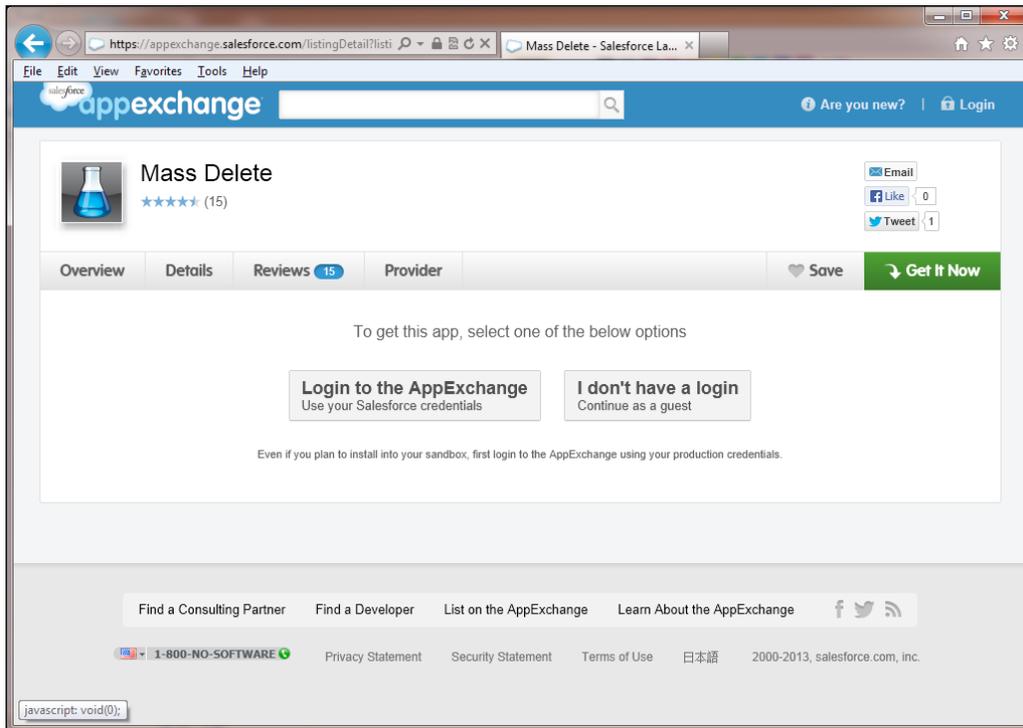
 The **Mass Delete** app from Force.com Labs is available from the AppExchange Marketplace directly through the following URL:
<http://appexchange.salesforce.com/listingDetail?listingId=a0N300000016YuDEAU>

The **Mass Delete** app page looks as follows:

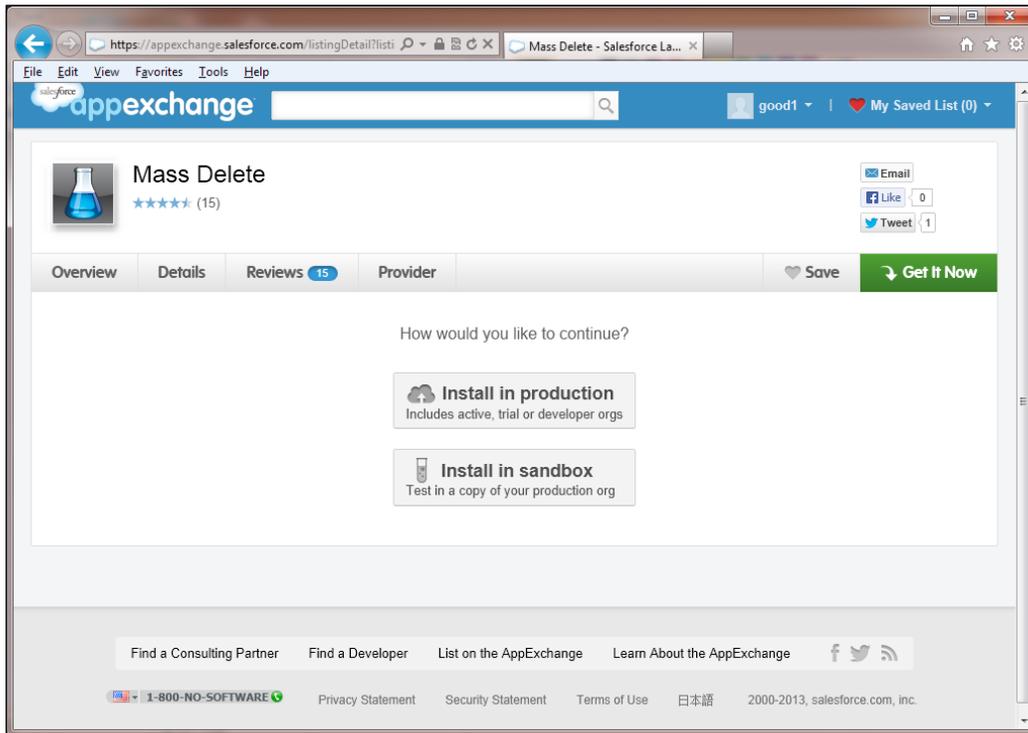


Get It Now

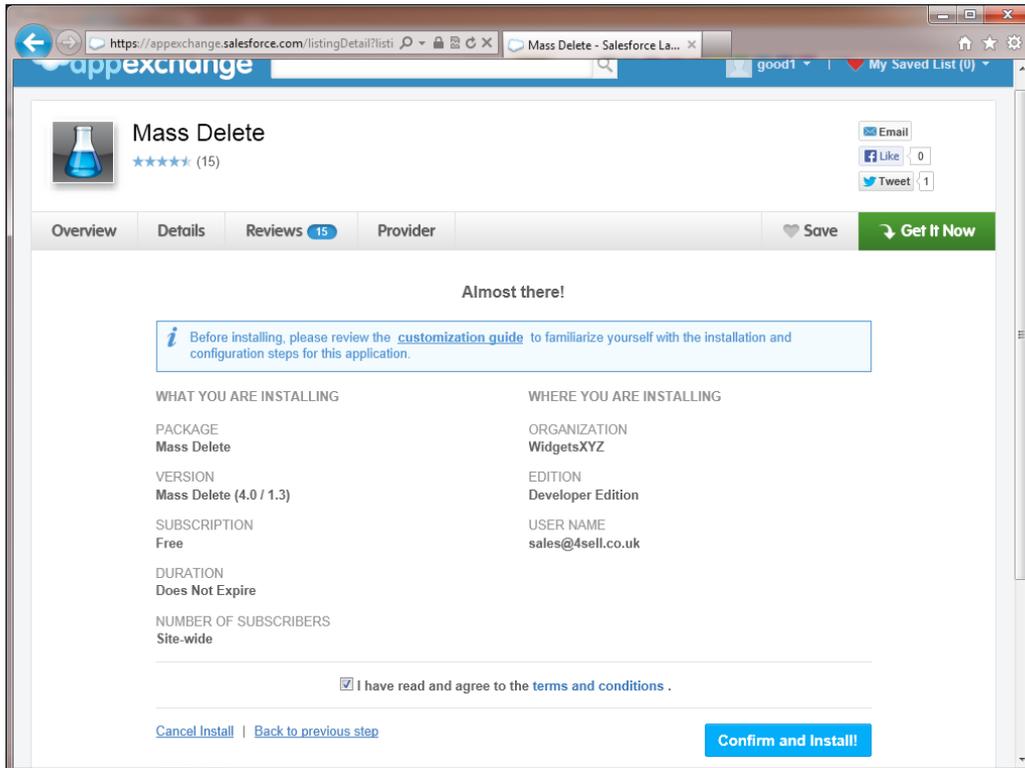
By clicking on the **Get It Now** button, you will start the process of installing the application where you will be prompted to log in to AppExchange using your Salesforce credentials, as shown in the following screenshot:



You will then be asked to select the location for the installation, where the options are set to either **Install in production** or **Install in sandbox**, as shown in the following screenshot:

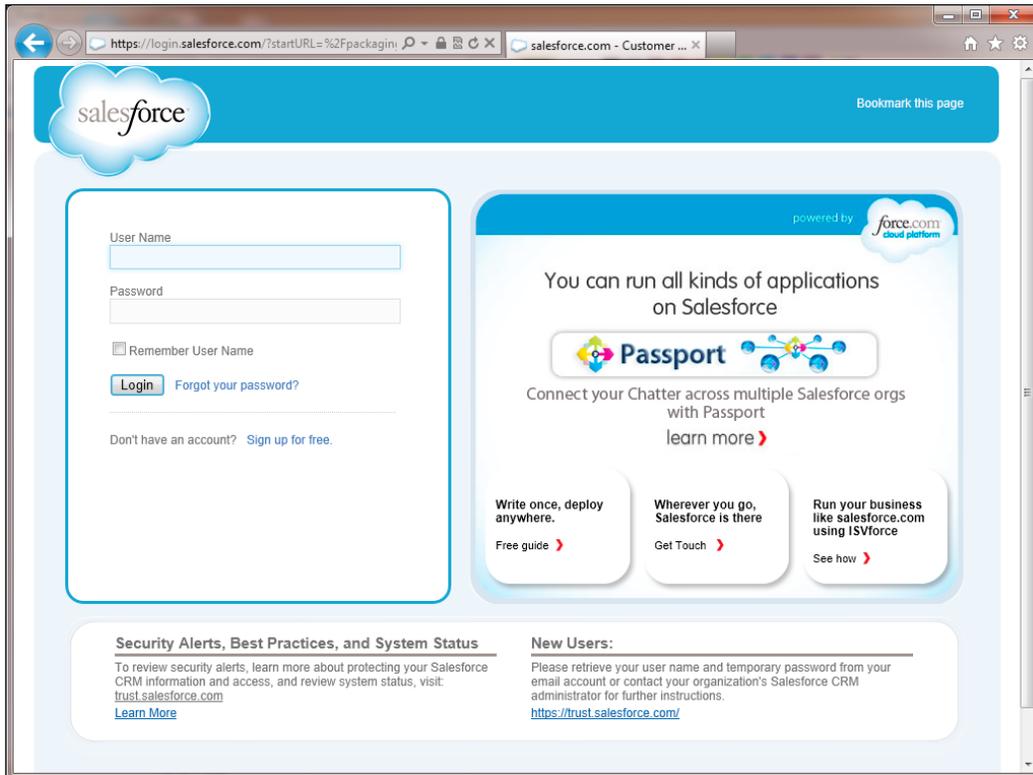


You will then be presented with details of the app that will be installed (listed in the *What you are installing* section) and the Salesforce organization where the app will be installed (listed in the *Where you are installing* section), as shown in the following screenshot:



This page shows you information about **Package** and **Version**, along with the **Subscription**, **Duration**, and **Number of Subscribers** information, which is a part of the app package.

Click on the checkbox labeled **I have read and agree to the terms and conditions** to confirm that you agree to proceed with the installation, and then click on the **Confirm and Install!** button to continue to the Salesforce login screen, as shown in the following screenshot:



This screen allows you to log in to the Salesforce app. If you wish to install the app into your production org, you would use your production login details along with the Salesforce production URL, which might be `https://login.salesforce.com`. If you want to install the app into a sandbox org, you must change the login URL to that of the sandbox, which is `https://test.salesforce.com`, and use your sandbox login details.

Now, enter the **User Name** and **Password** fields, and then click on **Login** to proceed to the next screen.



Install Mass Delete

By Salesforce Labs



What if existing component names conflict with ones in this package?

Do not install.

Rename conflicting components in package.



Install for Admins Only



Install for All Users



Install for Specific Profiles...

Install

Cancel

App Name	Publisher	Version Name	Version Number
Mass Delete	Salesforce Labs	4.0	0.3

Description
A set of custom list buttons that you can add to your standard list views or related lists. Users can select any number of records and delete all of them with a single click.

Additional Details [View Components](#) [API Access](#)

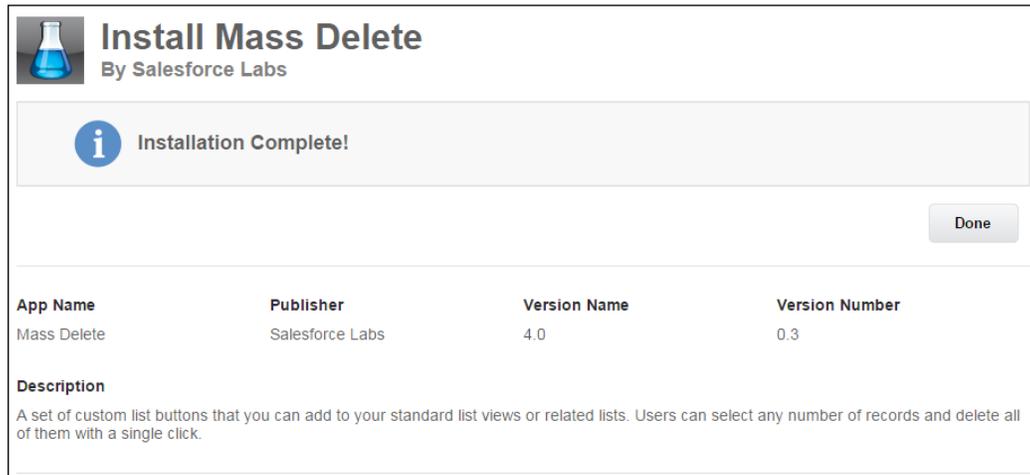
In this pre-install screen, you are presented with an option, termed **What if existing component names conflict with ones in this package?**, the purpose of which is to handle a situation when an existing component's name conflicts with a component being installed. Here, the options available are **Do not install** or **Rename conflicting components in package**.

Also within this pre-install screen you are presented with three options to either **Install for Admins Only**, **Install for all Users**, or **Install for Specific Profiles...**

Choosing the third option **Install for Specific Profiles...** will allow you select which profiles profiles are given access to the package contents.

Now, click on the **Install** button to proceed with the installation.

Upon successful installation you will be presented with the following **Installation Complete!** Screen:



The final **Installation Complete!** screen shows you information about **App Name**, **Publisher**, **Version Name**, and various other details that make up the app package.

This screen provides confirmation that the app package has been successfully installed.

On In this final confirmation screen, clicking on the **Done** button will navigate from the confirmation page to a screen showing all installed packages for your Salesforce organization.

For large and complex apps, you might not see the **Installation Complete Confirmation** screen straightaway. Instead, either a screen that shows a message that the installation has been scheduled is displayed, for which you later receive an e-mail notification when complete, or a screen is shown indicating the installation is in progress, as shown in the following screenshot:



Install Mass Delete

By Salesforce Labs


Installing and granting access to admins Only...

App Name	Publisher	Version Name	Version Number
Mass Delete	Salesforce Labs	4.0	0.3

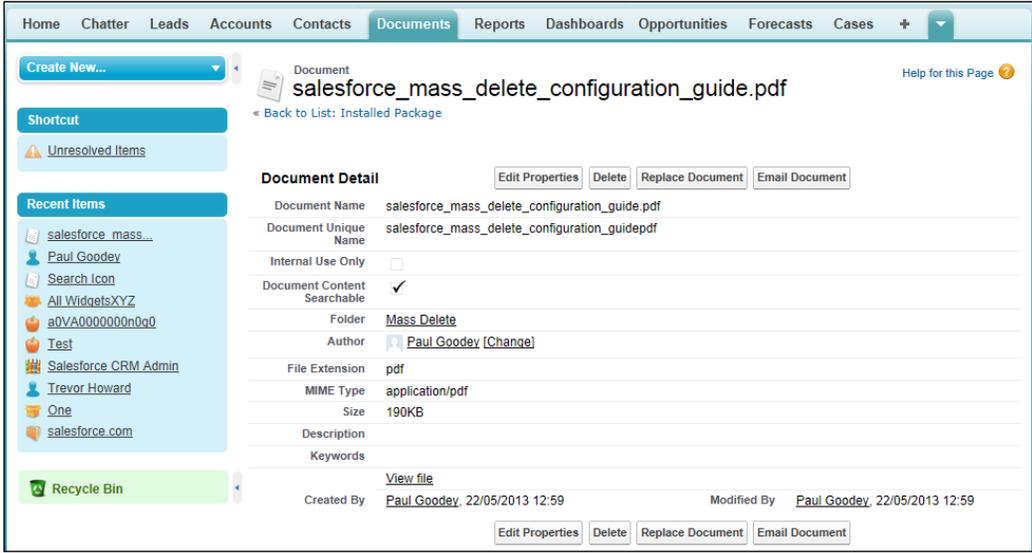
Description

A set of custom list buttons that you can add to your standard list views or related lists. Users can select any number of records and delete all of them with a single click.

Additional Details [View Components](#) [API Access](#)

Post-installation configuration

In this **Mass Delete** app, included in the package components, is a PDF guide that describes the post-installation configuration that must be applied to the app before the functionality can be used. The guide can be accessed from within the **Documents** tab, as shown in the following screenshot:



The screenshot shows the Salesforce interface with the **Documents** tab selected. The document list shows a file named **salesforce_mass_delete_configuration_guide.pdf**. The **Document Detail** pane is open, showing the following information:

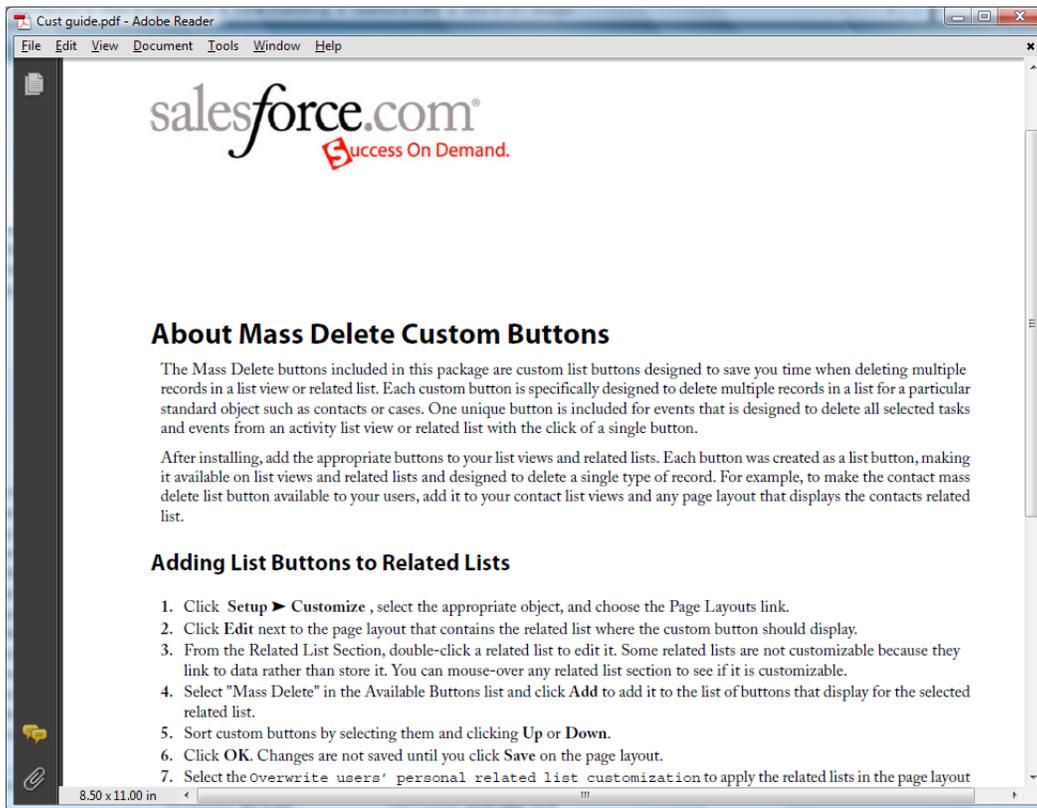
- Document Name:** salesforce_mass_delete_configuration_guide.pdf
- Document Unique Name:** salesforce_mass_delete_configuration_guidepdf
- Internal Use Only:**
- Document Content Searchable:**
- Folder:** [Mass Delete](#)
- Author:** [Paul Goodey \(Change\)](#)
- File Extension:** pdf
- MIME Type:** application/pdf
- Size:** 190KB
- Description:**
- Keywords:**
- Created By:** [Paul Goodey](#), 22/05/2013 12:59
- Modified By:** [Paul Goodey](#), 22/05/2013 12:59

Navigation buttons at the top of the detail pane include **Edit Properties**, **Delete**, **Replace Document**, and **Email Document**. A **View file** link is also present below the description field.

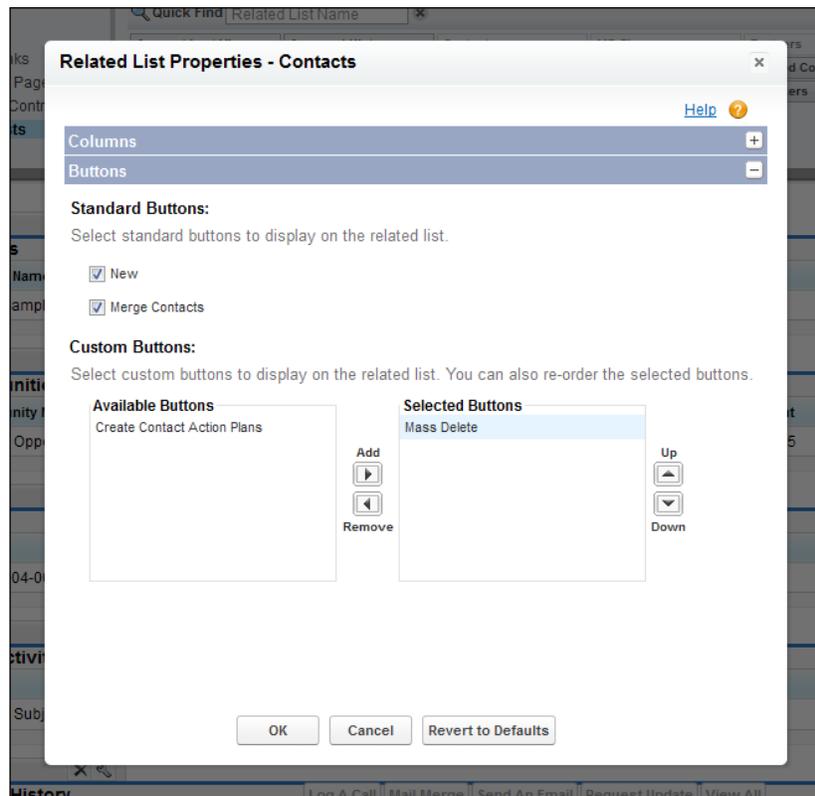
If you do not see the Document tab in your list of tabs, you can add this tab by referring to the section *Hiding and showing tabs* in *Chapter 3, Configuration in Salesforce CRM*.

Alternatively, to find the document you could instead use the Global Search option, as described in *Chapter 1, Organization Administration*, and type the following search term `salesforce_mass_delete_configuration_guide.pdf`.

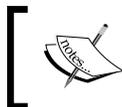
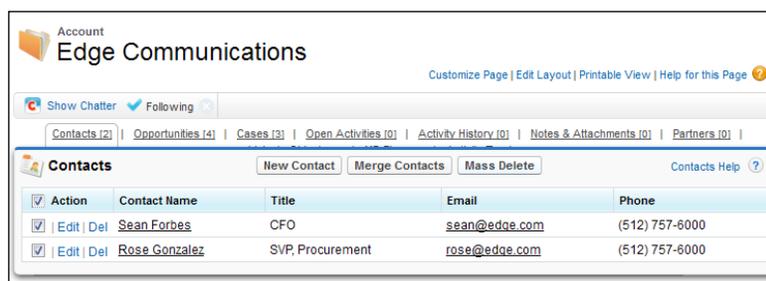
The guide describes how to complete the installation and customization of the app:



Using the guide, we add the custom list button to the **Contacts** related list within the **Accounts** detail page, as shown in the following screenshot:



Finally, to verify the installation and customization, we can navigate to the **Accounts** detail page and access the **Contacts** related list section, whereupon we can access the **Mass Delete** custom button and the associated functionality.



In the Salesforce CRM Unlimited Edition, you can install an unlimited number of apps. In the Enterprise Edition, there is a maximum limit of 10 apps.

Uninstalling an app

You can uninstall an app that has been installed from the AppExchange, there are some considerations however. If you uninstall a package that includes a custom object, all components associated with that custom object are deleted, such as custom fields, validation rules, workflow rules, approval processes, custom buttons and links, and so on.



You cannot uninstall a package if any component in the package is referenced by a component that will not be included in the uninstall operation, or if a field added by the package is being updated by a scheduled job, such as a time-based workflow field update (you must wait until the background job finishes and retry).

After an uninstall operation, Salesforce automatically creates an export file containing the package data. When the uninstall operation is complete, Salesforce sends an e-mail containing a link to the admin user who is carrying out the uninstall operation.

The export files (plus related notes and attachments) are listed below the list of installed packages.



Salesforce recommends that you back up and store the export file elsewhere because it will only be available for a limited period after the uninstall operation. To uninstall an AppExchange app, navigate to **Setup | Installed Packages**, as shown in the following screenshot:

The screenshot shows the Salesforce 'Installed Packages' page. On the left is a navigation sidebar with sections for 'Personal Setup' (My Personal Information, Email, Import, Desktop Integration, My Chatter Settings) and 'App Setup' (Customize, Create, Develop, Deploy). The 'Installed Packages' link is highlighted. The main content area has a search bar and a 'Help for this Page' link. Below is a 'Visit AppExchange' button. The main text explains that apps and components are installed in packages and are initially marked as 'In Development'. It also provides instructions on how to uninstall or manage licenses. A table titled 'Installed Packages' shows one package with the name 'Mass Delete', version 0.3, and an install date of 10/07/2011 17:05. Below the table is a section for 'Data from Uninstalled Packages' which shows 'No uninstalled package data archives'.

Action	Package Name	Publisher	Version Number	Namespace Prefix	Install Date
Uninstall	Mass Delete		0.3		10/07/2011 17:05

Now, select the installed package and either click on the **Uninstall** action or click on the package name to review the details of the package. Then set the uninstall confirmation checkbox. Finally, click on the **Uninstall** button as shown in the following screenshot:

Uninstalling a Package [Help for this Page](#)

Uninstalling this package will:

- Permanently delete all components in this package (listed below)
- Permanently delete all customizations you have made to these components

During an uninstall, salesforce.com automatically generates an export file containing the package data as well as related notes and attachments. This file is available for 48 hours if you need to retrieve the data. Note that re-importing your export data is not automatic. Reload your data manually and recreate any relationships between objects. Some components can not be recreated and others require special treatment. [Tell me more](#)

Action	Name	Parent Object	Type
Mass Delete			Document Folder
Mass Delete		Opportunity	Button or Link
Mass Delete		Opportunity Product	Button or Link
Mass Delete		Product	Button or Link
Mass Delete		Case	Button or Link
Mass Delete		Contact	Button or Link
Mass Delete		Event	Button or Link
Mass Delete		Solution	Button or Link
Mass Delete		Account	Button or Link
Mass Delete		Campaign	Button or Link
Mass Delete		Asset	Button or Link
Mass Delete		Lead	Button or Link
Mass Delete		Contract	Button or Link
	salesforce_mass_delete_configuration_guide.pdf		Document

Yes, I want to uninstall this package and permanently delete all associated components

AppExchange best practices

The following best practices should be applied as part of the installation of apps from the AppExchange Marketplace website:

- Clarify that the specification for the app meets the requirements and assess any reviews and comments
- Take a test drive, if available

- Review all the components that are included in the package and be aware of any security issues concerning links and session IDs
- Test the app in a sandbox before deploying it into production
- Try to enlist business support to own and validate the app before deploying it into production
- Consider undertaking a pilot deployment for selected users if the app is particularly complex
- Communicate the app to the business prior to deployment and activation in production
- Prepare training material for all affected users if the app is particularly complex

Change management overview

As outlined in the section on installing apps from AppExchange Marketplace, you should properly evaluate the functionality and results of deploying an app within your Salesforce CRM organization. This concept is part of a wider concern, which addresses the way changes are applied to the Salesforce CRM application.

With the use of Salesforce sandboxes, you can properly evaluate and perform due diligence for new Salesforce functionality, before deciding to roll it out to your users in the production system. In the case of an AppExchange app, if the app proves to be unsuccessful, then it need not be uninstalled.

Salesforce sandboxes

Sandboxes are separate Salesforce CRM environments that are isolated from your Salesforce production organization, so actions that you carry out in your sandboxes do not affect your Salesforce production environment and vice versa.

To view and manage your existing sandboxes or create new ones in Salesforce CRM, navigate to **Setup | Data Management | Sandboxes**.

 The Sandbox feature is only available in a licensed, production instance of Salesforce.com.

You can view the list of any existing sandboxes that have been created, and clicking on a sandbox name allows you to view details about the sandbox, showing when it was created.

In **Sandbox List**, you can see the sandbox's **Name**, **Type**, **Status**, **Location**, **Current Org Id**, **Completed On**, and **Description** fields, where there are these types: **Developer**, **Developer Pro**, **Partial Copy**, and **Full**, as shown in the following screenshot:

Sandboxes [Help for this Page](#) 

Sandboxes are special organizations that are used to test changes or new apps without risking damage to your production data or configuration. Sandbox Templates are used to create new Sandboxes containing specific data sets.

Available Sandbox Licenses

Developer 10 Available (1 in use)	Developer Pro 1 Available (1 in use)	Partial Data 0 Available (0 in use)	Full 0 Available (1 in use)
---	--	---	---------------------------------------

Sandboxes | **Sandbox Templates** | Sandbox History

[New Sandbox](#)

Action	Name	Type	Status	Location	Current Org Id	Completed On	Description
Edit Del Refresh Login Dev		Developer	Completed	CS2	0000000000000000	30/05/2012 14:16	Developer sandbox
Edit Del Refresh Login Dev1		Developer Pro	Completed	CS17	0000000000000000	05/08/2018 11:07	Developer Pro sandbox
Edit Del Refresh Login Test		Full	Completed	CS18	0000000000000000	12/02/2018 08:14	Full Sandbox



Sandbox availability is dependent on your edition of Salesforce CRM. Some types are provided as standard while others are available at additional cost.

Developer sandbox

A **Developer** sandbox is intended to be used for coding and testing, and contains a copy of all the configuration setup from your production system. It does not, however, contain any of the data. There is a maximum of 200 MB of data storage and 200 MB of file storage that can be created. The **Developer** sandbox can be refreshed once per day.

Developer Pro sandbox

A **Developer Pro** sandbox is intended to be used for coding, testing, and user training, and contains a copy of all the configuration setup from your production system. It does not, however, contain any of the data. There is a maximum of 1 GB of data storage and 1 GB of file storage that can be created. The **Developer Pro** sandbox can be refreshed once per day.

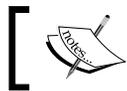
Partial Copy sandbox

A **Partial Copy** sandbox is intended to be used as a testing environment and contains a copy of your production organization's configuration setup. Unlike the **Developer** and **Developer Pro** sandboxes, a **Partial Copy** sandbox permits a sample of your production organization's data that you define using a sandbox template.

To create a **Partial Copy** sandbox, you must apply a sandbox template at creation time, although there is a maximum of 5 GB of data storage and 5 GB of file storage that can be stored. For each selected object in the sandbox template, up to 10,000 records are brought over from the production environment. For example, if you have a template that includes only accounts to create a **Partial Copy** sandbox, up to 10,000 account records will be copied into the new sandbox, but no other records will be copied. Unlike the **Developer** and **Developer Pro** sandboxes, the **Partial Copy** sandbox can only be refreshed once every five days.

Full copy sandbox

A **Full copy** sandbox contains a copy of your entire production setup, including all the data. Because the data is also copied over during a refresh operation, there is a limit of refreshing the **Full copy** sandbox once every 29 days. **Full copy** sandboxes have the same storage limit as the production organization.



The **Full copy** sandbox is generally used for **User Acceptance Testing (UAT)**.

Clicking on the **New Sandbox** button allows you to create a new sandbox.

The **Sandbox Templates** tab is used with **Partial Copy** sandboxes and determines the types of record and data that is to be copied over from the production environment.

The **Sandbox History** tab allows you to see the sandbox refresh history, showing when the sandboxes were created and who created them.

The **Refresh** link allows you to replace an existing sandbox with a new copy. The existing copy of the sandbox remains available while the refresh operations is complete and until you activate the new copy.

When creating or refreshing a **Full** sandbox, you can reduce the time taken for the refresh by reducing the amount of data that is copied. The following options allow you to reduce the amount of data that is copied:

- **Case History:** This allows you to select the number of days of case history from your production organization to copy to your sandbox. You can copy from 0 to 180 days in 30-day increments. The default value is 30 days.
- **Opportunity History:** This allows you to select the number of days of opportunity history from your production organization to copy to your sandbox. Here, you can copy from 0 to 180 days in 30-day increments. The default value is 0 days.



By default, **Chatter** data is not copied to your sandbox. **Chatter** data includes feeds, messages, and discovery topics. Select the **Copy Chatter Data** checkbox if you wish to copy it.

Salesforce does not recommend that you increase the default selections, as too much data can cause delays in the time it takes to copy or refresh the sandbox.

The **Refresh** option is only shown for each sandbox that is available for refreshing.

An **Activate** link allows you to activate a refreshed sandbox, which must be done before you can start using the new sandbox.



The **Activate** option is only displayed for refreshed sandboxes that are yet to be activated.

Activating a refreshed sandbox replaces the existing sandbox with the refreshed version and permanently deletes the old version and any data in it.

The **Login** option allows you to log in to a sandbox.



The **Login** button is only displayed for system administrators and might not always be available. Users can log in to an active sandbox using the `https://test.salesforce.com` URL and entering a modified username, which is `<username>`, from production, with a suffix for the name of the sandbox. So, for a sandbox called **Test**, the URL would be `martin.brown@widgetsXYZ.com.test`.

Sandboxes that no one has logged in to for 180 days are deleted. Users who have created or most recently refreshed any sandbox within your organization will be notified that the sandbox is scheduled for deletion. These users will receive at least three e-mail notifications over 30 days prior to the deletion.

 Salesforce recommends that you keep a sandbox active by logging in periodically to avoid e-mail notifications.

By using a sandbox, you can ensure that changes are deployed in a structured and controlled manner, and any change can be undone more easily. This is known as change management.

Effective change management reduces the risk when introducing new areas of functionality and when making changes to existing functionality. It obviously depends on the amount and complexity of the planned change, but for risk-free and successful implementation of changes in Salesforce CRM, there needs to be a change-management strategy, which typically covers the following steps:

1. Change requests.
2. Configure, develop, and deploy.

Change requests

When working with a change-management process in an organization, change requests are typically gathered from ideas and requests from management and application users.

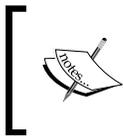
 **Case management for change requests**
One method to gather and store change requests is by utilizing the case-management features within Salesforce CRM itself. This feature can be set up to enable users to enter their required changes directly. You can even consider building an approval process, so that the change is approved by the user's manager before being considered in any release cycle.

However, the change requests are captured, you need a process to analyze and prioritize the lists of requests and assess the scope of the work required. It can be useful to classify the changes that are requested for inclusion in either an immediate, a minor, or a major release.

Immediate release

Change items, which are suitable for immediate release, are very small changes that can be quickly implemented. They carry no risk and can be made directly into the production environment. Changes such as new dashboards or reports, modifications to existing dashboards and reports, and field positioning on page layouts and related lists, are considered small changes. This category of release also includes simple data changes, such as data imports and exports.

Changes can be configured, tested, and deployed with minimal impact, and therefore, these changes do not usually need to go through the change control process.

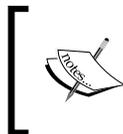


It is worth considering, however, how the changes are applied in any other sandbox such as a developer, user acceptance, or test environment to ensure that all the sandbox environments are kept in sync.

Minor release

Minor releases are for larger changes that can be grouped and scheduled, perhaps every 30 or 60 days. The types of change that fall into this category include new fields, new page layouts, new custom objects, and so on, which are more complicated than the immediate release change items.

Minor release change items are medium-level changes that can be implemented with minor impact on the production environment and typically require less than a day of additional training for users, and overall less than a week of customization or code changes.



It is worth considering, however, how the changes are applied in any other sandbox such as a **Developer**, **User acceptance**, or **Test environment** to ensure that all the sandbox environments are kept in sync.

Major release

Major releases are large changes that carry risk and have a major impact on the business or environment. These changes are the ones that require modification to the user interface, the way data is updated, data migrations, and any integration projects. These types of changes include new or modified role hierarchies, profiles, page layouts, record types, sales and support processes, workflow and approvals, and custom code. These changes can be introduced with the introduction of new AppExchange apps, process-impacting configuration changes, data migrations, and integration.



Major release change items carry a high level of risk and are obviously more complicated than a minor release change. These changes might require additional time to train users and in general require more than a week of customization or code changes.

Configure, develop, and deploy

Typical compliance requirements for change management are that changes are appropriately tested and validated, and only approved changes are deployed into production.

Configuration, development, and testing should always typically be carried out using a sandbox environment, and a record should be maintained to record the successful testing, validation, and approval of any changes prior to deployment or production. Depending on the scope and scale of the change request, as described previously, you might need to consider using a different environment for development and testing.

A complex change often sees the need for a developer sandbox and separate testing sandbox. When the changes are finished in the developer sandbox, they are migrated to the testing sandbox, and only when approved are they deployed into the production environment.

Only after appropriate review and agreement by the approval authority can the changes ever be deployed into the production environment.

User adoption

In *Chapter 7, Salesforce CRM Functions*, we looked at the core functionality that Salesforce CRM provides and also at how the complete sales process, from campaign and lead capture right through to customer service and support, can be captured.

There, we looked in detail at how Salesforce provides the facilities to obtain a full 360-degree view of the customer's past, present, and future relationships within our organization.

We looked at how this information enables marketing to measure the return on investment for marketing campaigns, sales to optimize the sales pipeline and sell more to each customer, support to track customer support incidents, and requests to ensure that each one is resolved appropriately and in a timely fashion.

Having this process in place is one thing, but to ensure that the information is captured to support the process is another issue altogether. After all, processes and technologies are only as good as the people who use them so it is vital that users regularly log in, create, and update information into Salesforce CRM.

CRM technology, therefore, must be easy to use, accessible, and scalable to ensure that the efforts of using the system provide significant enhancements in productivity, efficiency, and information accessibility. Once the business goals have been established and can be measured, organizations generally need to address methods to ensure or increase user adoption. Here, you can cultivate active product advocates or evangelists from within your business to support certain initiatives for any relevant areas of the business.

A significant factor for successful adoption is to give users incentives to use the system by providing them with functionality that improves the way they work and offers valuable information and tools that are not available elsewhere within the organization.

Another important consideration is to encourage feedback from the user community. By encouraging feedback and instilling a sense of collaboration, a collective ownership for Salesforce CRM can be obtained, which will instill trust. Responding to good suggestions, customizing, and communicating enhancements to the application can lead to better acceptance of changes and makes people more likely to want to spend their time working with the application.

In spite of the positives mentioned, user adoption cannot be assumed or taken for granted, and your company might need to consider reinforcing adoption with rules as well as rewards.

User adoption seeks to ensure that the business communities, as described previously, are effectively using Salesforce CRM and that the features that have been implemented are being properly utilized and continue to successfully address the business challenges.

To enable the monitoring of user adoption, there need to be effective reports and dashboards to capture adoption metrics where the following areas can be considered when building user adoption metrics:

- Usage
- Data quality
- Business performance

Usage

The first key requirement to ensure that Salesforce CRM is being appropriately used is by measuring the number and frequency of users logging in to the system. You also need to ensure that users are actively and consistently updating data and creating new **Leads, Contacts, Opportunities, Cases** depending on their roles in the organization.

Having a well-implemented business application should help make the business processes simple and hide complexity; this all helps increase user adoption. However, making a computer application appear simple often requires a considered approach and sometimes, takes far more effort than leaving it in its natural complex state. Removing obstacles and unnecessary features takes time and effort, but it is time and effort well spent, and will hopefully result in higher adoption rates.

Simplicity

As a platform, Salesforce CRM has proven to be highly successful since its conception a decade ago, and the number of organizations and subscriptions to the service grows year on year. Much of this success can be attributed to the simplicity, ease of use, and focus on user productivity that the platform affords.

While you might feel justified in introducing new mandatory fields and enforcing data capture requirements in the application, this can sometimes make the system less user friendly. Sometimes, applications that offer the simplest solution for a given problem are more likely to be rewarded with acceptance and adoption by your Salesforce community.

Connectivity

Enabling users to connect information from other tools, such as Microsoft Outlook, and fully integrating Salesforce CRM with other such business systems provides a mechanism to access all the information users need.

Salesforce Mobile

In the past, mobile devices that were capable of accessing software applications were very expensive. Often, these devices were regarded as a *nice to have* accessory by management and were seen as a company perk by field teams. Today, mobile devices are far more prevalent within the business environment, and organizations are increasingly realizing the benefits of using mobile phones and devices to access business applications.

Salesforce.com provides several mobile apps and solutions to keep your users connected and productive when using their mobile devices. These solutions are covered in detail in the next chapter, which is *Chapter 10, Mobile Administration*.

Communications

Users are far more likely to adopt Salesforce CRM when they know that their peers and colleagues are achieving results from its use. By communicating both the business and personal results – for example, an increase in company sales and the resulting sales commissions paid to the sales team – you can encourage others to adopt the system.

Data quality

Data quality is a valuable metric to measure adoption. Although, it is advisable not to overcomplicate the entering of information with needless validation, it is important that any critical fields be complete.

When certain fields are consistently filled out, user acceptance will increase, as it provides good data integrity and reliability, which translates into higher user confidence and higher adoption.

Business performance

Usage should also reflect business performance and compliance metrics that are used to ensure that users are not just using the application, but are using it in a way that enhances business effectiveness. Here, metrics that will uncover patterns and trends that track performance levels can be built, and can then identify areas that need improvement.

This has been a quick overview of areas that can be used to generate metrics that you can track, and there is an enormous quantity of metrics that can be generated.

There is a balance, however, in getting accurate views without overcomplicating and spawning too many metrics. Here, it is often best to create the minimum number of metrics that can adequately capture and track the success of the business performance objectives.

Certain performance indicators can be established to identify business sales revenues, which are listed as follows:

- Compare the current fiscal year with the last year's sales by month, say, to measure cyclical variances.
- Compare sales from existing customers against new customers to measure which type of customer revenue is coming in, and enhance CRM activities accordingly.
- Compare won and lost sales ratios to measure the effectiveness of deal closure, see why deals are being lost, and learn from the reasons.
- Measure the sales pipeline by sales stage to identify where new opportunities are appearing.
- Measure key opportunities in the sales pipeline to identify the current key opportunities and ensure they get the right attention.
- Measure closed sales actuals against quota. Here, you can introduce a closed sales leader board to identify who your top deal-closers are. This can sometimes be seen as a way to shame bad performers, but sales management can use this information positively to get the top performers to share knowledge and best practices to help the organization.

For marketing specific metrics, the following examples can be performed:

- Measure campaigns by **Return On Investment (ROI)**, Actual ROI, by campaign type, and average opportunity amount per campaign.
- Measure lead conversion rates.

There are many dashboards that you can install from AppExchange that give metrics for how Salesforce is being used. The following is called **Salesforce Adoption Dashboards**, which is an example from Force.com Labs:

The screenshot shows the Salesforce AppExchange listing for the 'Salesforce Adoption Dashboards' app. The page is titled 'Salesforce Adoption Dashboards' and provides visibility to relevant user login history & key feature adoption. It features a 'Login Wall of FAME' for 'FAME' and 'SHASE', 'ALL USER Logins', and 'Logins by REGION' and 'DEPARTMENT'. The app is released on 10/26/2011, is free, and is categorized under 'Admin & Developer Tools'. The page also includes a 'Customers Also Installed' section and navigation links for 'Home', 'Accounts', 'Leads', and 'Field Trip'.



The **Salesforce Adoption Dashboards** app from Labs is available from the AppExchange Marketplace directly through the following URL:

<http://appexchange.salesforce.com/listingDetail?listingId=a0N30000004gHhLEAU>

Summary

In this chapter, we looked at ways to improve the experience of users in Salesforce CRM, by providing additional functionality using external applications from the Salesforce AppExchange.

We looked at the importance of planning and scheduling the release of changes into the Salesforce application and provided some best practices related to change management.

We also looked at how to improve user adoption by giving users incentives to use the system. We can do this by providing them with functionality that improves the way they work and offering valuable information and tools that are not available elsewhere within the organization.

In the next chapter, we will look at the capabilities and features of the various mobile solutions available from Salesforce.

These mobile offerings can significantly improve productivity and user satisfaction, and allow users to access data and application functionality while away from their computer.

We will cover the administration and system requirements for the two varieties of mobile solutions, mobile browser apps and downloadable apps, and look at the devices that are currently supported by Salesforce.

10

Mobile Administration

In this chapter, we will look at the administration of Salesforce Mobile solutions that can significantly improve productivity and user satisfaction and help them access data and application functionality out of the office.

In the past, mobile devices that were capable of accessing software applications were very expensive. Often, these devices were regarded as a *nice to have* accessory by management and were seen as a company perk by field-based teams.

Today, mobile devices are far more prevalent within the business environment, and organizations are increasingly realizing the benefits of using mobile phones and devices to access business applications.

Salesforce has taken the lead in recognizing how mobiles have become the new standard for being connected in people's personal and professional lives. It has also highlighted how increasingly, the users of their apps are living lives connected to the Internet, but rather than sitting at a desk in the office, they are in between meetings, on the road, in planes, in trains, in cabs, or even in the queue for lunch. As a result, Salesforce has developed innovative mobile solutions that help you and your users embrace this mobile-first world in Salesforce CRM.

Accessing Salesforce Mobile products

Salesforce offers two varieties of mobile solutions, namely mobile browser apps and downloadable apps. Mobile browser apps, as the name suggests, are accessed using a web browser that is available on a mobile device. Downloadable apps are accessed by first downloading the client software from, say, the Apple App Store or Google Play and then installing it onto the mobile device. Mobile browser apps and downloadable apps offer various features and benefits and, as we'll see, are available for various Salesforce mobile products and device combinations.

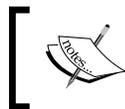
Most mobile devices these days have some degree of web browser capability, which can be used to access Salesforce CRM; however, some Salesforce mobile products are optimized for use with certain devices. By accessing a Salesforce mobile browser app, your users do not require anything to be installed. Supported mobile browsers for Salesforce are generally available on Android, Apple, BlackBerry, and Microsoft Windows 8.1 devices.

Downloadable apps, on the other hand, will require the app to be first downloaded from the App Store for Apple® devices or from Google Play™ for Android™ devices and then installed on the mobile device.

Salesforce mobile products' overview

Salesforce has provided certain mobile products as downloadable apps only, while others have been provided as both downloadable and mobile browser-based. The following list outlines the various mobile app products, features, and capabilities used to access Salesforce CRM on mobile devices:

- SalesforceA
- Salesforce Touch
- Salesforce1
- Salesforce Classic



Salesforce Touch is no longer available and is mentioned here for completeness as this product has been recently incorporated into the Salesforce1 product.

SalesforceA

SalesforceA is a downloadable system administration app that allows you to manage your organization's users and view certain information for your Salesforce organization from your mobile device. Salesforce A is intended to be used by system administrators, as it is restricted to users with the `Manage Users` permission.

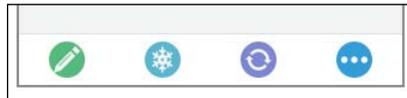
The SalesforceA app provides the facilities to carry out user tasks, such as deactivating or freezing users, resetting passwords, unlocking users, editing user details, calling and emailing users, and assigning permission sets. These user task buttons are displayed as action icons, as shown in the following screenshot:

The available action icons depend on the user and organization. To open the action menu with all available actions for the current user, tap the More Actions  icon.

The icons represent the following actions.

Action Icon	Action
	Edit the user record
	Freeze or unfreeze the user account
	Reset the user's password
	Deactivate or activate the user account
	Assign permission sets to the user
	Email the user
	Call the user or log a call made outside of the SalesforceA app.

These icons are presented in the action bar at the bottom of the mobile device screen, as shown in the following screenshot:



In addition to the user tasks, you can view the system status and also switch between your user accounts in multiple organizations. This allows you to access different organizations and communities without having to log out and log back in to each user account. By staying logged in to multiple accounts in different organizations, you will save time by easily switching to the particular organization user account that you need to access.

SalesforceA supported devices

At the time of writing, the following devices are supported by Salesforce for use with the SalesforceA downloadable app:

- Android phones
- Apple iPhone
- Apple iPod Touch

SalesforceA can be installed from Google Play™ for Android™ phones and the Apple® App Store for Apple devices.

Salesforce Touch

Salesforce Touch is the name of an earlier Salesforce mobile product and is no longer available. With the Spring 2014 release, Salesforce Touch was incorporated into the Salesforce1 app. Hence, both the Salesforce Touch mobile browser and Salesforce Touch downloadable apps are no longer available; however, the functionality that they once offered is available in Salesforce1, which is covered in this chapter.

Salesforce1

Salesforce1 is Salesforce's next-generation mobile CRM platform that has been designed for Salesforce's customers, developers, and ISVs (independent software vendors) to connect mobile apps, browser apps, and third-party app services. Salesforce1 has been developed for a mobile-first environment and demonstrates how Salesforce's focus as a platform provider aims to connect enterprises with systems that can be programmed through APIs, along with mobile apps and services that can be utilized by marketing, sales, and customer service.

There are two ways to use Salesforce1: either using a mobile browser app that users can access by logging into Salesforce from a supported mobile browser or downloadable apps that users can install from the App Store or Google Play. Either way, Salesforce1 allows users to access and update Salesforce data from an interface that has been optimized to navigate and work on their touchscreen mobile devices.

Using Salesforce1, records can be viewed, edited, and created. Users can manage their activities, view their dashboards, and use Chatter. Salesforce1 also supports many standard objects and list views, all custom objects, plus the integration of other mobile apps and many of your organization's Salesforce customizations, including Visualforce tabs and pages.

Salesforce1 supported devices

At the time of writing this, the following devices are supported by Salesforce for the Salesforce1 mobile browser app:

- Android phones
- Apple iPad
- Apple iPhone

- BlackBerry Z10
- Windows 8.1 phones (Beta support)

Also, at the time of writing this, Salesforce specifies the following devices as being supported for the Salesforce1 downloadable app:

- Android phones
- Apple iPad
- Apple iPhone

Salesforce1 data availability

Your organization edition, the user's license type, along with the user's profile and any permission sets, determines the data that is available to the user within Salesforce1.

Generally, users have the same visibility of objects, record types, fields, and page layouts that they have while accessing the full Salesforce browser app. However, at the time of writing this, not all data is available in the current release of the Salesforce1 app.

In Winter 2015, these key objects are fully accessible from the Salesforce1 navigation menu: Accounts; Campaigns; Cases; Contacts; Contracts; Leads; Opportunities; Tasks; and Users. Dashboards and Events, however, are restricted to being viewable from only the Salesforce1 navigation menu.



Custom objects are fully accessible if they have a tab that the user can access.

For new users who are yet to build a history of recent objects, they initially see a set of default objects in the Recent section in the Salesforce1 navigation menu.

The majority of standard and custom fields, and most of the related lists for the supported objects, are available on these records; however, at the time of writing this, the following exceptions exist:

- Rich text area field support varies (detailed shortly)
- Links on formula fields are not supported
- State and country picklist fields are not supported
- Related lists in Salesforce1 are restricted (detailed shortly)

Rich text area field support varies

Support for rich text area fields varies by the version of Salesforce1 and the type of device.

For Android's downloadable apps, you can view and edit rich text area fields. However, for Android's mobile browser apps, you can only view rich text area fields; editing is not supported currently.

For iOS's downloadable apps, you can view but not edit rich text area fields. However, for iOS's mobile browser apps, you can view and also edit rich text area fields.

Finally, for both BlackBerry and Windows 8.1 mobile browser apps, you can neither view nor edit rich text area fields.

Related lists in Salesforce1

Related lists in Salesforce1 are restricted and display the first four fields that are defined on the page layout for that object. The number of fields shown cannot be increased.

If Chatter is enabled, users can also access feeds, people, groups, and Salesforce Files.

 When users are working with records in the full Salesforce app, it can take up to 15 days for this data to appear in the Recent section; thus, to make records appear under the Recent section sooner, ask users to pin them from their search results in the full Salesforce site.

Salesforce1 administration

You can manage your organization's access to Salesforce1 apps; there are two areas of administration: the mobile browser app that users can access by logging in to Salesforce from a supported mobile browser and the downloadable app that users can install from the App Store or Google Play. The upcoming sections describe the ways to control user access to each of these mobile apps.

Salesforce1 mobile browser app access

You can control whether users can access the Salesforce1 mobile browser app when they log into Salesforce from a mobile browser. To select or deselect this feature, navigate to **Setup | Mobile Administration | Salesforce1 | Settings**, as shown in the following screenshot:

Salesforce1 Settings Help for this Page ?

There are two ways to use Salesforce1: a mobile browser app that users access by logging in to Salesforce from a supported mobile browser, and downloadable apps that users install from the App Store or Google Play.

You can control your organization's access to all of the Salesforce1 apps.

Mobile Browser App Settings ! = Required Information

Enable the Salesforce1 mobile browser app i

Downloadable App Settings

Salesforce1 downloadable app settings are now located in [Connected Apps](#)

By selecting the **Enable the Salesforce1 mobile browser app** checkbox, all users are activated to access Salesforce1 from their mobile browsers. Deselecting this option turns off the mobile browser app, which means that users will automatically access the full Salesforce site from their mobile browser.

[


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By default, the mobile browser app is turned on in all Salesforce organizations.

Salesforce1 desktop browser access

Selecting the **Enable the Salesforce1 mobile browser app** checkbox, as described in the previous section, permits users who are activated to access Salesforce1 from their desktop browsers.

Users can navigate to the Salesforce1 app within their desktop browser by appending “/one/one.app” to the end of the Salesforce URL. As an example, for the following Salesforce URL accessed from the server na10, you would enter the `https://na10.salesforce.com/one/one.app` desktop browser URL.

Salesforce1 downloadable app access

The Salesforce1 app is distributed as a managed package, and within Salesforce, it is implemented as a connected app. You might already see the Salesforce1 connected app in your list of installed apps as it might have been automatically installed in your organization.



The list of included apps can change with each Salesforce release but, to simplify administration, each package is asynchronously installed in Salesforce organizations whenever any user in that organization first accesses Salesforce1. However, to manually install or reinstall the Salesforce1 package for connected apps, you can install it from the AppExchange.

To view the details for the Salesforce1 app in the connected app settings, navigate to **Setup | Manage Apps | Connected Apps**. The apps that connect to your Salesforce organization are then listed as shown in the following screenshot:

Connected Apps Help for this Page ?

Manage the apps that connect to your Salesforce organization.

App Access Settings Edit

Allow users to install canvas personal apps

View: All Create New View

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other **All**

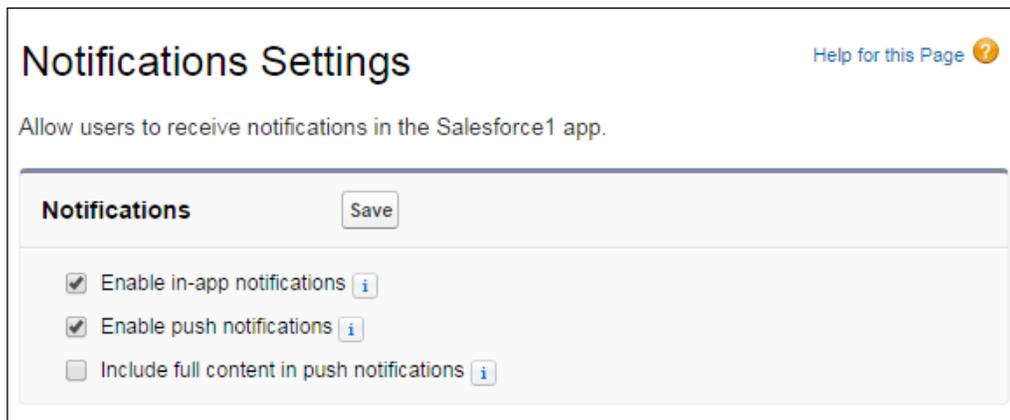
Action	Master Label ↑	Application Version	Permitted Users
Edit	Ant Migration Tool	4.0	All users may self-authorize
Edit	Chatter Desktop	7.0	All users may self-authorize
Edit	Chatter Mobile for BlackBerry	7.0	All users may self-authorize
Edit	Dataloader Bulk	6.0	All users may self-authorize
Edit	Dataloader Partner	6.0	All users may self-authorize
Edit	Force.com IDE	4.0	All users may self-authorize
Edit	Salesforce Files	5.0	All users may self-authorize
Edit	Salesforce for Outlook	6.0	All users may self-authorize
Edit	Salesforce Mobile Dashboards	6.0	All users may self-authorize
Edit	Salesforce Touch	7.0	All users may self-authorize
Edit	Salesforce1 for iOS	7.0	All users may self-authorize
Edit	Salesforce1/Chatter for Android	7.0	All users may self-authorize
Edit	SalesforceA	1.0	All users may self-authorize
Edit	Workbench	2.0	All users may self-authorize

Show me [fewer](#) ▲ records per list page

Salesforce1 notifications

Notifications allow all users in your organization to receive mobile notifications in Salesforce1, for example, whenever they are mentioned in Chatter or whenever they receive approval requests.

To activate mobile notifications, navigate to **Setup | Mobile Administration | Notifications | Settings**, as shown in the following screenshot:

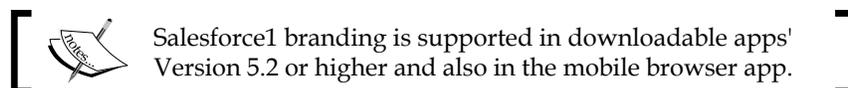


The settings for notifications can be set as follows:

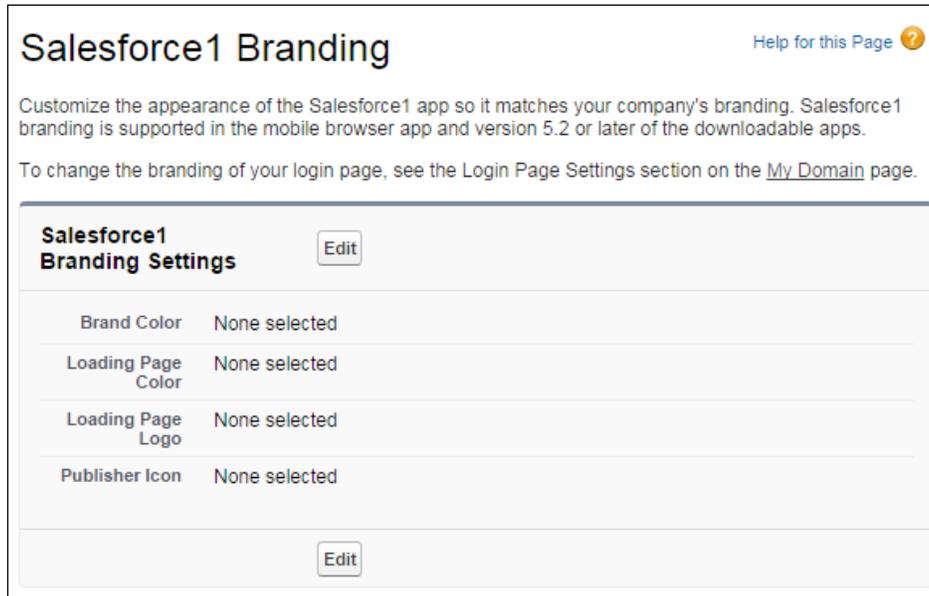
- **Enable in-app notifications:** Set this option to keep users notified about relevant Salesforce activity while they are using Salesforce1.
- **Enable push notifications:** Set this option to keep users notified of relevant Salesforce activity when they are not using the Salesforce1 downloadable app.
- **Include full content in push notifications:** Keep this checkbox unchecked if you do not want users to receive full content in push notifications. This can prevent users from receiving potentially sensitive data that might be in comments, for example. If you set this option, a pop-up dialog appears, displaying terms and conditions where you must click on **OK** or **Cancel**.

Salesforce1 branding

This option allows you to customize the appearance of the Salesforce1 app so that it complies with any company branding requirements that might be in place.



To specify Salesforce1 branding, navigate to **Setup | Mobile Administration | Salesforce1 | Branding**, as shown in the following screenshot:



Salesforce1 compact layouts

In Salesforce1, compact layouts are used to display the key fields on a record and are specifically designed to view records on touchscreen mobile devices. As space is limited on mobile devices and quick recognition of records is important, the first four fields that you assign to a compact layout are displayed.

 If a mobile user does not have the required access to one of the first four fields that have been assigned to a compact layout, the next field, if more than four fields have been set on the layout, is used.

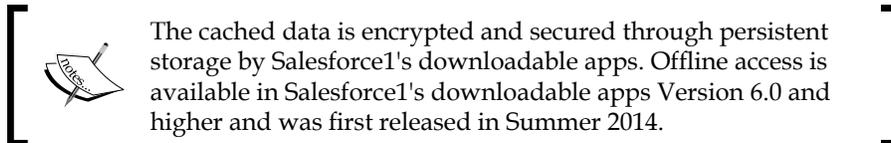
If you are yet to create custom compact layouts, the records will be displayed using a read-only, predefined system default compact layout, and after you have created a custom compact layout, you can then set it as the primary compact layout for that object.

As with the full Salesforce CRM site, if you have record types associated with an object, you can alter the primary compact layout assignment and assign specific compact layouts to different record types. You can also clone a compact layout from its detail page.

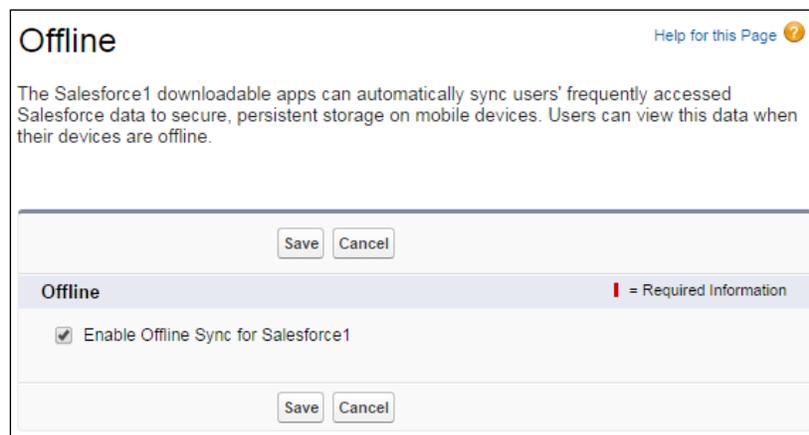
The upcoming field types cannot be included on compact layouts: text area, long text area, rich text area, and multiselect picklists.

Salesforce1 offline access

In Salesforce1, the mechanism to handle offline access is determined by users' most recently used records. These records are cached for offline access; at the time of writing this, they are read-only.



Offline access is enabled by default when Salesforce1's downloadable app is installed. To manage these settings, navigate to **Setup | Mobile Administration | Offline**. Now, check or uncheck **Enable Offline Sync for Salesforce1**, as shown in the following screenshot:



When offline access is enabled, data based on the objects is downloaded to each user's mobile device and presented in the **Recent** section of the Salesforce1 navigation menu and on the user's most recently viewed records. The data is encrypted and stored in a secure, persistent cache on the mobile device.

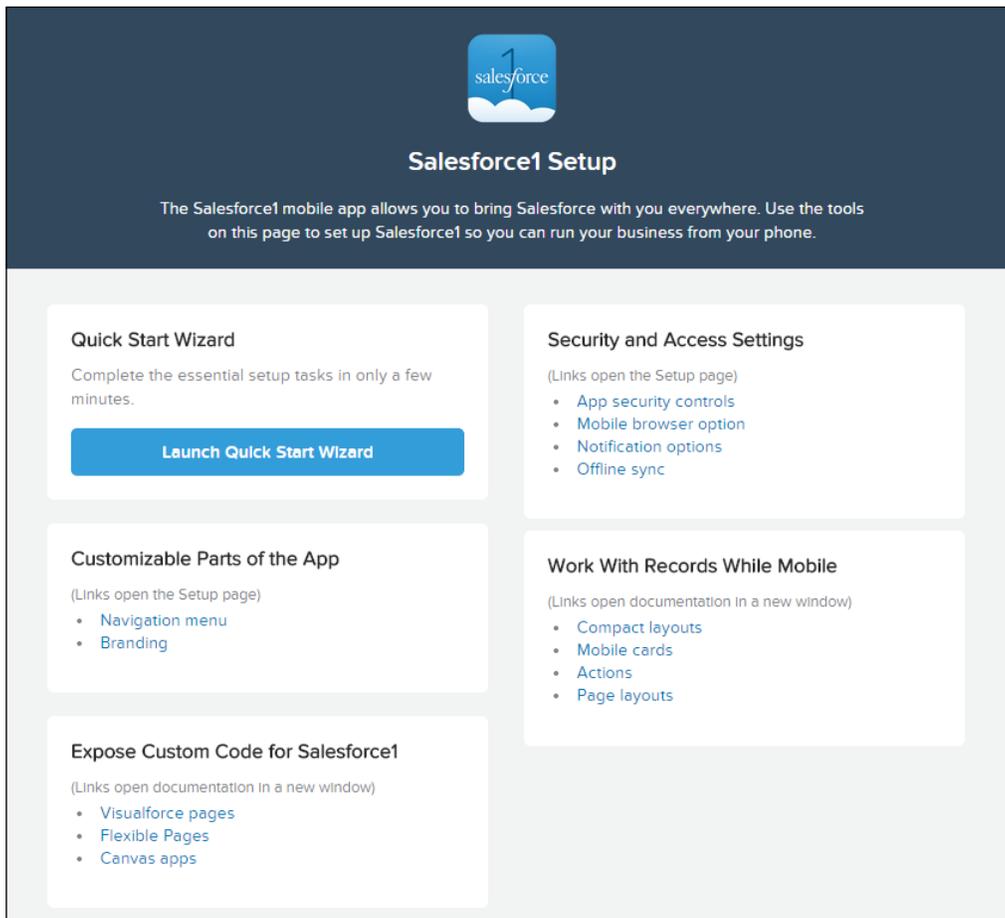
Setting up Salesforce1 with the Salesforce1 Wizard

The Salesforce1 Wizard simplifies the setting up of the Salesforce1 mobile app. The wizard offers a visual tour of the key setup steps and is useful if you are new to Salesforce1 or need to quickly set up the core Salesforce1 settings.

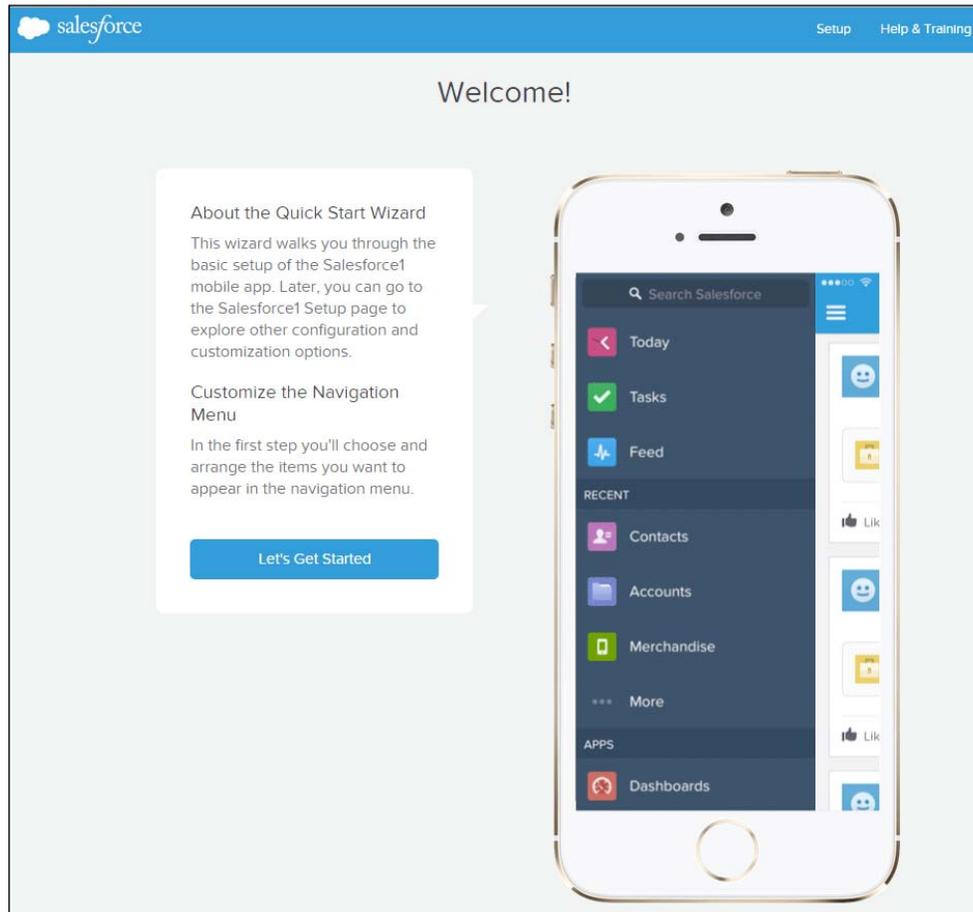
The Salesforce1 Wizard guides you through the setting up of the following Salesforce1 configuration steps:

1. Choose which items appear in the navigation menu
2. Configure global actions
3. Create a contact custom compact layout
4. Optionally, invite users to start using the Salesforce1 app

To access the Salesforce1 Wizard, navigate to **Setup | Salesforce1 Setup**. Now, click on **Launch Quick Start Wizard** within the Salesforce1 Setup page, as shown in the following screenshot:



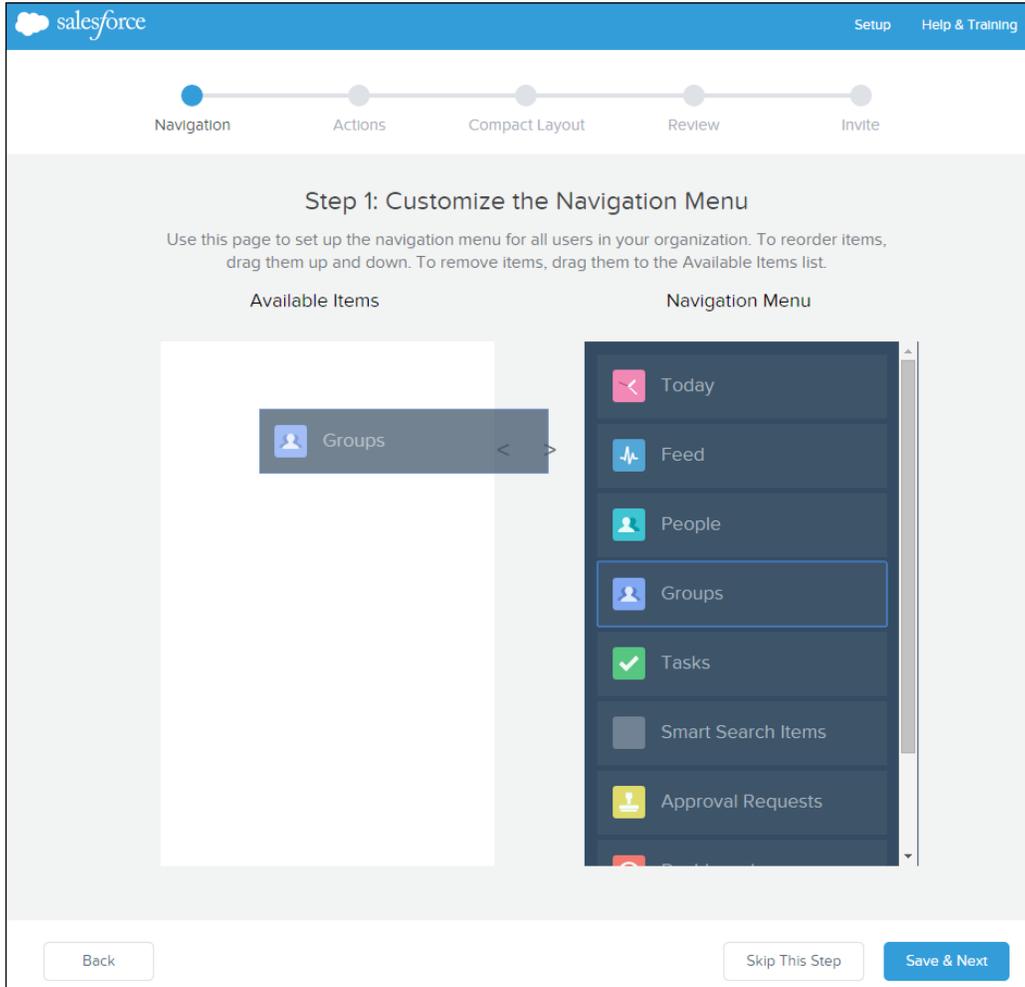
Upon clicking on the **Let's Get Started** section link (shown in the following screenshot), you will be presented with the **Salesforce1 Setup** visual tour, as shown in the next section.



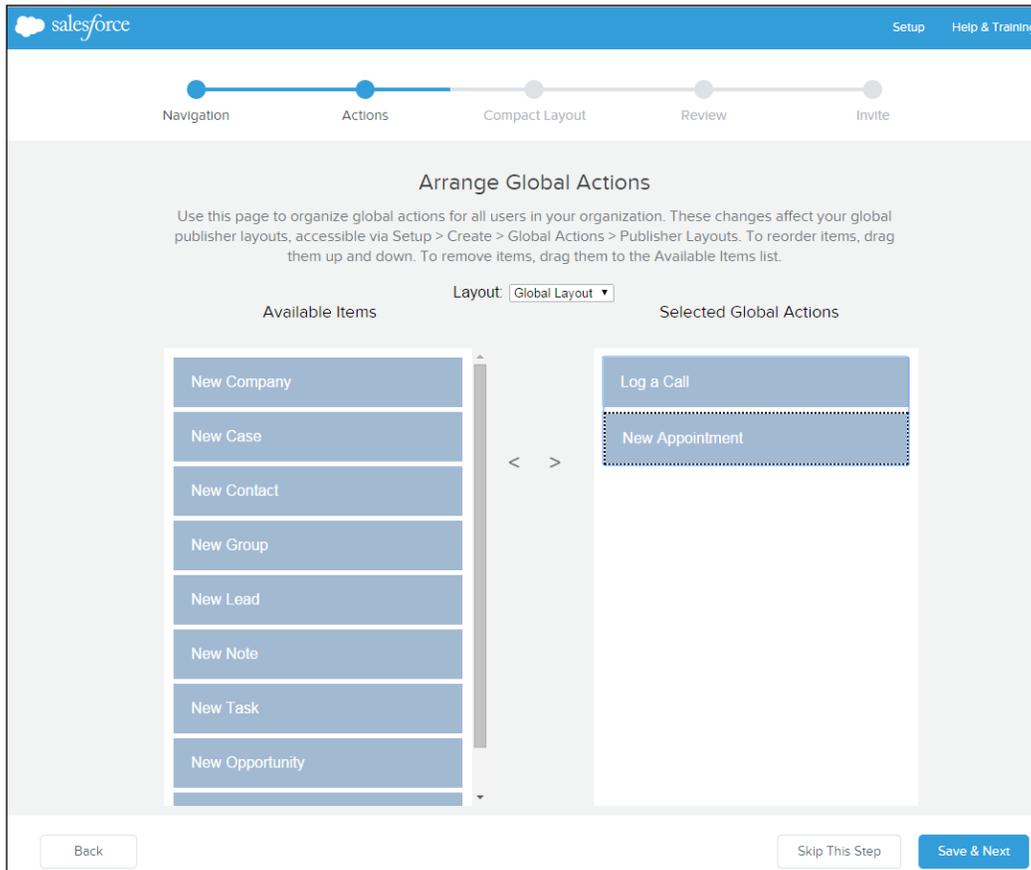
The Quick Start Wizard

The **Quick Start Wizard** guides you through the minimum configuration steps required to set up Salesforce1. By clicking on the **Launch Quick Start Wizard** button, the process to complete the essential setup tasks for Salesforce1 is initiated and provides a step-by-step wizard guide. The five steps are:

1. **Customize the Navigation Menu:** This step results in the setup of the navigation menu for all users in your organization. To reorder items, drag them up and down. To remove items, drag them to the **Available Items** list, as shown in the following screenshot:

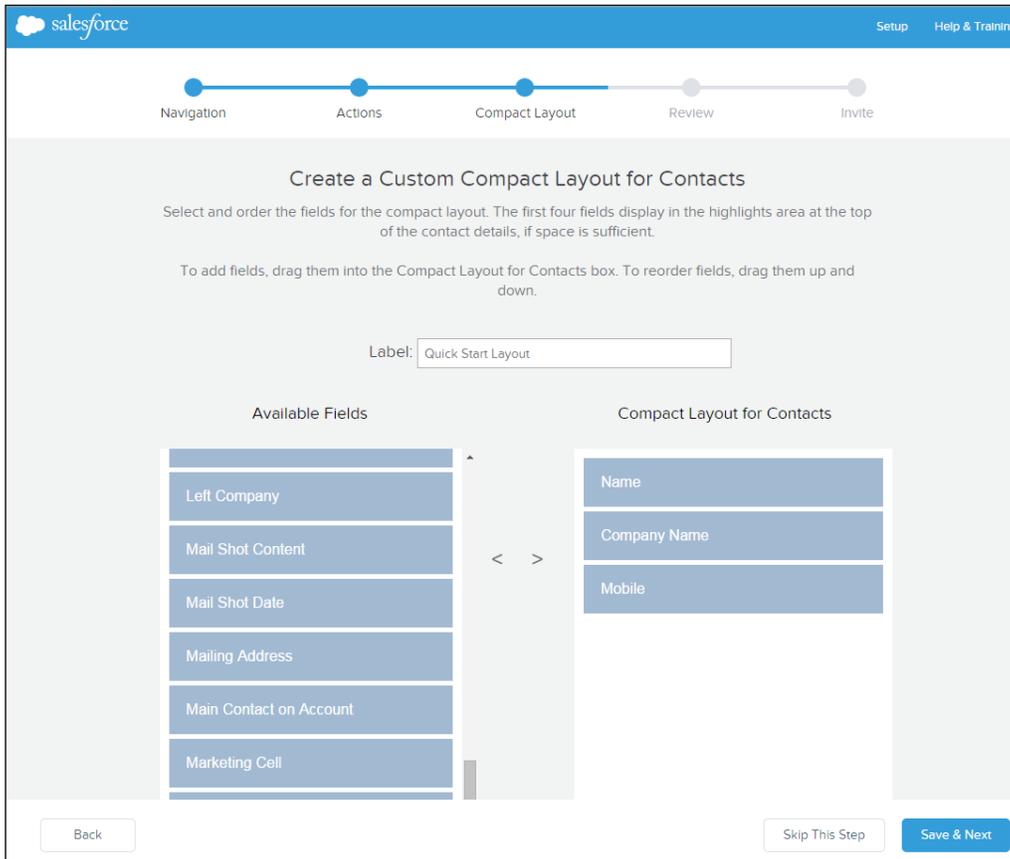


2. **Arrange Global Actions:** Global actions provide users with quick access to Salesforce functions and in this step, you will choose and arrange the Salesforce1 global actions, as shown in the following screenshot:



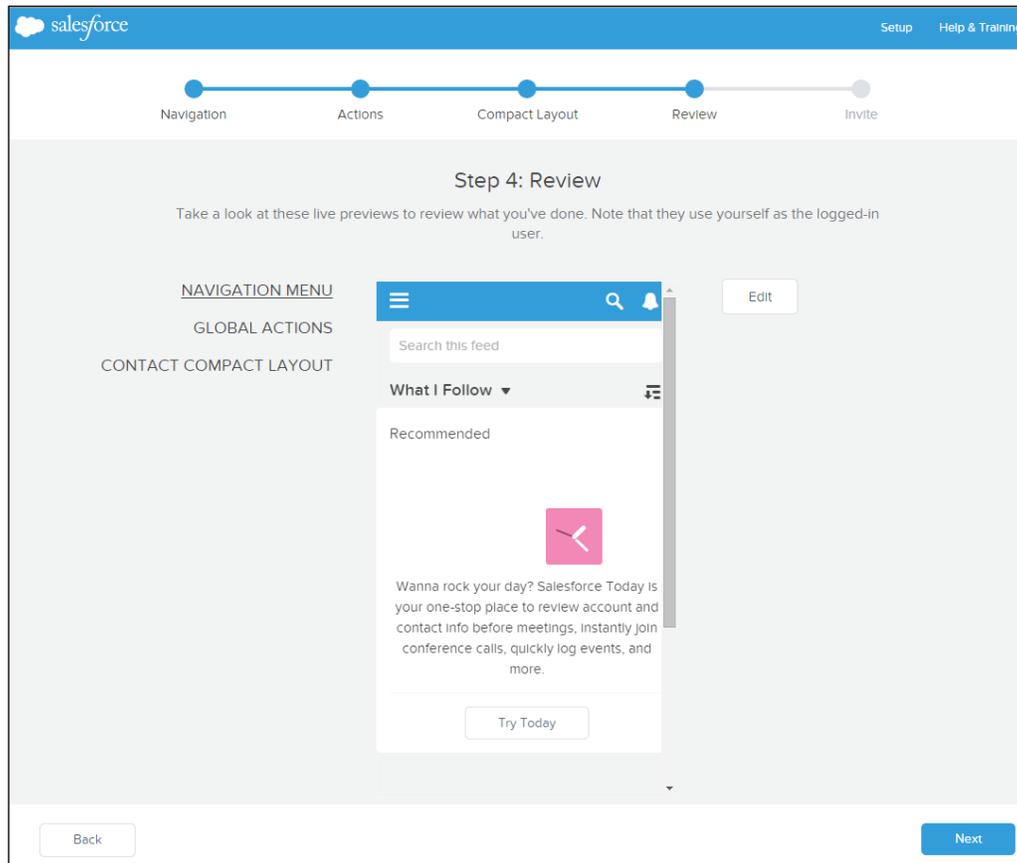
Actions might have a different appearance, depending upon your version of Salesforce1.

3. **Create a Custom Compact Layout for Contacts:** Compact layouts are used to show the key fields on a record in the highlights area at the top of the record detail. In this step, you are able to create a custom compact layout for contacts to set, for example, a contact's name, e-mail, and phone number, as shown in the following screenshot:



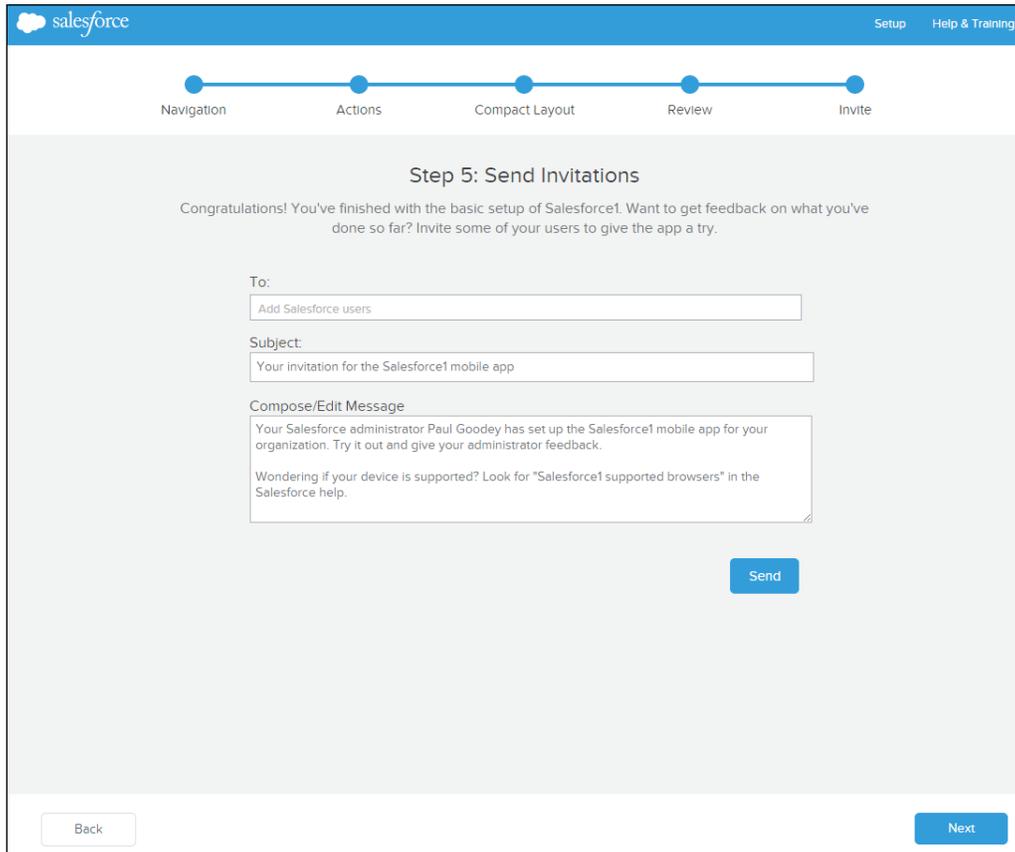
However, after you have completed the **Quick Start Wizard**, you can create compact layouts for other objects as required.

4. **Review:** In this step, you are given the chance to preview the changes to verify the results of the changes, as shown in the following screenshot:



The review step screen gives you a live preview that uses your current access as the logged-in user.

5. **Send Invitations:** This is the final step of the **Quick Start Wizard**, which will provide you with a basic setup of Salesforce1 and allow you to get feedback on what you have implemented. In this step, you can invite your users to start using the Salesforce1 app, as shown in the following screenshot:



This step can be skipped and you can always send invitations later from the Salesforce1 setup page. You can also implement additional options to customize the app, such as incorporating your own branding.

Differences between Salesforce1 and the full Salesforce CRM browser app

In the Winter 2015 release and at the time of writing this, Salesforce1 does not have all of the features of the full Salesforce CRM site; moreover, in some areas, it includes functionality that is not available in, or is different from, the complete Salesforce site.

As an example, on the full Salesforce CRM site, compact layouts determine which fields appear in the Chatter feed item and which appear after a user creates a record via a publisher action. However, compact layouts in Salesforce1 are used to display the key fields on a record.

For details about the features that differ between the full Salesforce CRM site and Salesforce1, refer to *Salesforce1 Limits and Differences from the Full Salesforce Site* within the Salesforce Help menu sections.

Salesforce Classic

Salesforce Classic is a more mature product within the mobile solutions provided by Salesforce ; it provides mobile access to Salesforce CRM data, tasks, and calendars, and integrates this data with users' e-mail and mobile devices.

There are two types of Salesforce Classic, namely: a full version and a free version. The full version of the Salesforce Classic app requires mobile licenses, which might be part of your standard Salesforce CRM licenses. There is also a free, limited version of Salesforce Classic that allows any Salesforce CRM user who does not have a mobile license to download a free, restricted version of Salesforce Classic.

Salesforce Classic supported operating systems

At the time of writing this, the supported operating systems for Salesforce Classic downloadable apps are as follows:

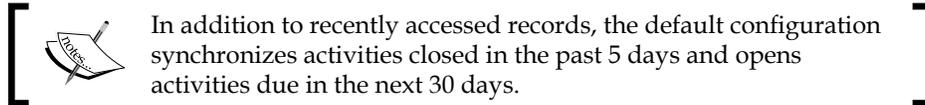
- Android
- Apple iOS
- BlackBerry

Users can install the downloadable apps from the App Store, Google Play, and Blackberry World. However, recently released mobile devices might not be supported because every device must be put through Salesforce's official certification process.

Salesforce Classic data availability

Most standard sales objects and some service objects are also available; if you are using the full version, custom objects and configurations are also supported. The free version allows your users to view, create, edit, and delete only accounts, assets, contacts, leads, opportunities, events, tasks, cases, and solutions. Users can also access their dashboards.

In the free version of Salesforce Classic, only records that users have recently accessed in the Salesforce CRM browser app are automatically synchronized to their mobile devices. However, users can search for and download any records that are not automatically delivered to their mobile devices.



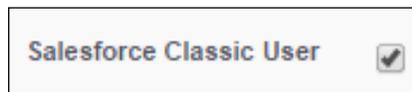
For both full and free versions of Salesforce Classic, any items that are downloaded from Salesforce become a permanent part of your users' mobile data set.

Salesforce Classic administration

You can manage your organization's access to the Salesforce Classic apps, and there are separate features to control access depending on whether you are setting up the full or free version.

Salesforce Classic full version access

The Mobile User checkbox on the user record assigns a mobile license to users that enables use of the full version of Salesforce Classic. This option is set and appears as shown in the following screenshot:



Salesforce Classic free version access

Other Salesforce users without an assigned mobile license can access the free version of Salesforce Classic, which is enabled by default.

Although the free version of Salesforce Classic is enabled by default, you might want to prevent any user without a full Salesforce Classic license from accessing their Salesforce data on a mobile device. So, to disable the free version of Salesforce Classic, you would navigate to **Setup | Mobile Administration | Salesforce Classic | Settings**. Now, click on the **Edit** button then deselect the **Enable Salesforce Classic Lite** option, as shown in the following screenshot:

Salesforce Classic Settings Help for this Page ?

Modify the Salesforce Classic settings for your organization.

Salesforce Classic Settings

Standard Salesforce Classic Settings

Enable Salesforce Classic Lite

This option allows users who do not have a mobile or Unlimited Edition license to use a free, restricted version of Salesforce Classic.

Advanced Salesforce Classic Settings

Permanently Link User to Mobile Device

Select this option only if you want to prevent your users from switching devices. Note that enabling this option requires administrative maintenance when users need to switch to a different device. Without administrative intervention, users who need to switch to a different device will be unable to use Salesforce Classic.



If you deselect this option while users are running the Salesforce Classic app, the Salesforce data on their mobile devices is deleted the next time the devices synchronize with Salesforce.

The Mobile Administration Console

The **Mobile Administration Console** is available to set up and manage mobile configurations and offers the following five-step process to set up Salesforce Classic:

1. **Create a mobile configuration:** This step creates a mobile configuration and allows the selection of users and/or profiles that will be linked to the configuration.
2. **Define dataset:** In this step, you will specify the dataset that will be synced to the mobile device and select the objects and record filters for these objects.
3. **Set the mobile data set size:** In this step, the size of the mobile data set is specified and you can test the data size against user accounts. For this test, you should aim to test a mobile configuration with the accounts of specific users who will be assigned to the configuration.

4. **Exclude fields:** In this optional step, you can modify any object's mobile page layout and exclude fields. This is often required because unnecessary fields consume memory and make it slow to scroll through pages on the mobile device.
5. **Send a mass email:** This is the final step of the **Mobile Administration Console**, which will allow you to send mass e-mails to mobile users to notify them about the availability of the mobile client application.

To access a demo of the setting up of Salesforce Classic and the overview of the setup steps within the **Mobile Administration Console**, navigate to **Setup | Mobile Administration | Salesforce Classic | Configurations**, as shown in the following screenshot:

The screenshot shows the 'Introducing the Mobile Administration Console' page. The title is 'Introducing the Mobile Administration Console' with a 'Help for this Page' link. The main text describes the console's purpose: 'The Mobile Administration Console is used to set up and manage mobile configurations so that salesforce.com users can easily and productively access their salesforce.com data from their mobile device, whether or not a wireless connection is available. Salesforce Classic allows users to quickly look up a contact and -- with one click -- place a phone call or send an email, then log the call or email directly into salesforce.com. Users can make appointments, create and assign tasks, follow up on leads, work on cases and much more, all conveniently from their mobile device.' A link to 'Mobile Platform' is provided for more information. A yellow callout box titled 'All Customers' states: 'Administrators should read the Mobile Implementation Guide before using the Mobile Administration Console. Existing mobile customers can find information in the guide about migrating from earlier versions of the mobile console.' Below this, a section titled 'Set up Salesforce Classic with the Mobile Administration Console in 5 steps:' lists five steps: 1. Create a mobile configuration, 2. Define the data set, 3. Set the mobile data set size, 4. Optionally exclude some fields, and 5. Send a mass email to mobile users. At the bottom, there is a link to a short demo, a checkbox for 'Don't show me this page again', and a 'Continue' button.

Summary

In this final chapter, we looked at ways in which mobiles have become the new normal way to stay connected in both our personal and professional lives.

Salesforce has recognized this well; we are all spending time being connected to the cloud and using business applications. However, instead of sitting at a desk, users are often on the go.

To try and help their customers become successful businesses in this mobile-first world, Salesforce has produced mobile solutions that can help users get things done regardless of where they are and what they are doing.

We looked at SalesforceA, an admin specific app that can help you manage users and monitor the status of Salesforce while on the move. We discussed Salesforce Touch, which is being replaced with Salesforce1, and we also spoke about the features and benefits of Salesforce1, which is available as a downloadable app and a browser app.

Finally, we discussed Salesforce Classic and looked at the features and administration considerations of Salesforce Classic's licenses; we also explored the free version.

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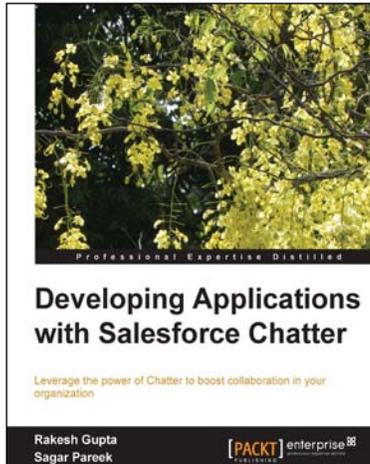
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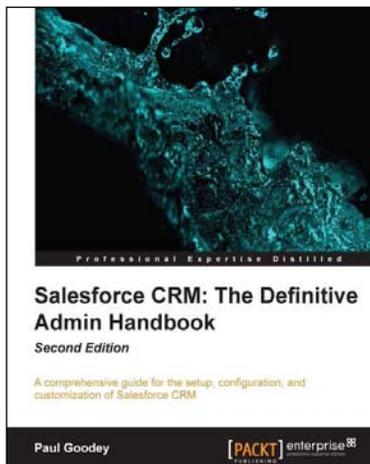


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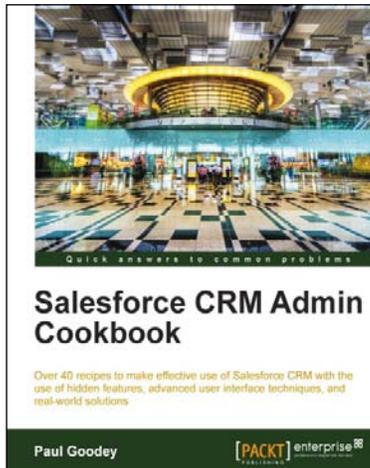


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