Salesforce Winter '07 Release Notes

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About the Release Notes

The Release Notes are a comprehensive user guide for the latest release of the Salesforce application and the AppExchange. Unlike a traditional release notes document that includes only a simple list of enhancements and known bugs, the Salesforce Release Notes give you everything you need to get and up and running with the new features and functionality in the latest release.

What's Included in the Release Notes

For every new piece of major functionality, the Release Notes provide:

- A brief, high-level description of the functionality
- Implementation tips to help you get started with setup and administration
- Best practice tips to help you maximize the benefit of the functionality
- Complete end-to-end instructions on how to set up and use the functionality

Beyond the major new features, the Additional Enhancements sections include a list and brief description of every other enhancement or functionality change included in the latest release—everything from new merge fields you can use in formulas to improved icons for greater usability to additional fields that are available in standard reports.

Let the Release Notes be your guide to success with the latest release from salesforce.com!

SALESFORCE CRM

Salesforce PRM

Salesforce PRM allows you to leverage the power of Salesforce to extend the benefits of a CRM system to your indirect sales channels through a simple and easy-to-use portal. Many new features have been added to Salesforce PRM in Winter '07, including:

- Custom objects are now available in the partner portal
- Activity-based collaboration with partners
- Configurable list views for partners
- Configurable email templates
- Partner statistics
- Password reset self-service for partners
- Ability for channel managers to log in as a partner user

Implementation Tips

To use PRM, follow these steps:

1. Contact customer support to purchase partner licenses.
2. Install the PRM Portal app.
3. Configure Salesforce for PRM.
4. Define your partner users and channel managers.
5. Customize PRM portals.

Best Practices

- Create a public group for channel managers. You can use this group for filtering and controlling access to documents. For more information, see "Creating and Editing Groups" in the Salesforce online help.
- Create a lead queue for channel managers. You can use this queue for lead assignment rules. For more information, see "Setting Up Queues" in the Salesforce online help.
- Use the All Partner Users group for filtering and controlling access to documents. For more granular control, you can also create a group for each partner organization. For more information, see Creating and Editing Groups.
- Create a lead queue for each partner organization and add all the partner users from that organization to the queue. You can create a queue that includes all of the partner users in a particular role. This allows you to assign leads to a partner organization rather than a specific partner user. For more information, see Setting Up Queues.
- Create a queue for all partner users. This allows you to make a lead available to any partner user. If you create a queue with channel manager roles and subordinates, the partner users under that channel manager cannot see the queue, but non-partner users can see and use the queue.
- Use notes and attachments on leads and opportunities so partners can add notes about the lead or opportunity.
- Create custom list views for partner users. These custom lists can be added to partner user page layouts or as statistics for the home page sidebar.

Note: If your organization uses divisions to segment data, avoid including the `Division` field in filter criteria in list views intended for partner users. Filter criteria based on divisions are ignored in the partner portal.

About Salesforce PRM

About Partner Relationship Management

Partner relationship management (PRM) allows companies that sell through indirect sales channels to maximize the return on their channel investments and increase channel revenues. With partner relationship management, organizations can manage, track, and forecast their channel business alongside their direct sales business. It also helps partners sell more effectively, close more business, and achieve greater profits.

Empowering your partners with your Salesforce data can help you sell more without spending more. However, you want to control the information your partners can access, and you want your partners to work within an application that uses your company's branding. You can accomplish this by granting your partners access to a Salesforce PRM portal.

A PRM portal allows partner users to log in to Salesforce through a separate website than your non-partner users. PRM portal users can only see the data that you have made available to them. Furthermore, PRM portal users can only manipulate data if you give them the appropriate user permissions.

The following Salesforce features are key to partner relationship management:

Partner accounts
Partner accounts are accounts that a channel manager uses to manage partner organizations, partner users, and activities.

Partner users
Partner users are Salesforce users with limited capabilities. They are associated with a particular partner account, have limited access to your organization's data, and log in via a PRM portal.

Channel managers
Channel managers are the internal users that manage your partners.

PRM portals
PRM portals allow partner users to log in to Salesforce through a web portal rather than through salesforce.com. You can customize the web portal to show your branding, and you can configure it to meet your functional and security needs. You can also have multiple portals to meet your different requirements for working with partners.

To use PRM, follow these steps:

1. Contact customer support to purchase partner licenses.
2. Install the PRM Portal app.
3. Configure Salesforce for PRM.
4. Define your partner users and channel managers.
5. Customize PRM portals.

Caution: Make sure your organization has not enabled the `Disallow HTML documents and attachments` setting available at **Setup ➤ Security Controls ➤ HTML Documents and Attachments Settings**. This setting blocks users from uploading any HTML file to the Documents tab or as an attachment to a record.

Installing the PRM App

User Permissions Needed	
To install apps:	"Download AppExchange Packages"

To install the Salesforce PRM app:

1. Go to the AppExchange by clicking **Setup ➤ Exchange ➤ Installed Apps**.
2. Click **Visit the AppExchange** to go to the AppExchange website.
3. Browse or search the AppExchange to find the PRM Portal app.
4. Click **Get It Now** from the app information page.
5. Review the components. PRM is composed of the PRM custom app and the Salesforce PRM Setup custom window.

Caution: Once it is installed, do not change the name of the PRM custom app. If you change the name of the custom app, PRM will no longer function properly.

6. Click **Next**.
7. Choose the `Select security settings` option. This allows you to choose the usage access for all existing custom and standard profiles in your organization.
8. Select "Full Access" as the access level for your administrator and channel manager profiles.

Note: If you have not created profiles for channel managers, you can give them access to the PRM custom app when you create the profiles.

9. Click **Next**.
10. Click **Install** to install all the components in the PRM app.
11. Click **OK**.

After installing the PRM app, follow these steps:

- Configure PRM.
- Configure channel managers and partner users.
- Create and customize one or more PRM portals.

Optionally, you may also want to create approval processes or a deal registration process.

Configuring PRM

User Permissions Needed	
To configure the PRM app:	Customize Application

Once you have installed the PRM app, you need to enable partner relationship management.

To enable partner relationship management:

1. Click **Setup ➤ Customize ➤ Partners ➤ Settings**.
2. Click **Edit**.
3. Select `Enable Partner Relationship Management`.
4. Click **Save**.

Note: Partner relationship management cannot be disabled. If you no longer need the functionality, deactivate your partner users.

After enabling partner relationship management, you need to configure how you will communicate user information with your partners. This involves setting the email address for these communications and defining email templates for new partner users and partner users requesting a password reset.

To configure PRM communication templates:

1. Click **Setup ➤ Partners ➤ Settings**.
2. Click **Edit**.
3. Set the following options:

Setting	Description
"From" Email Address	The email address from which all email communications will be sent, for example, "partners@acme.com." Salesforce sends the emails automatically, but they will appear to the partner user as if they were sent from this email address. If a partner user responds to the email, the response will be sent to this address.
"From" Email Name	The name that will be associated with the "From" Email Address, for example, "Acme Partner Program."
New User Template	The email template for notifying new partner users of their account and initial password.
New Password Template	The email template for notifying partners users of their temporary password when their password is reset by a Channel Manager or System Administrator.
Lost Password Template	The email template for notifying partner users of their temporary password when they request a password reset.

4. Click **Save**.

Samples of these communication templates are available, and are used by default. You should create custom templates that use your company branding and the URL to the partner portal.

About PRM User Management

There are two types of users for PRM—channel managers and partner users.

Channel managers are the internal users that manage your partners. Before enabling a PRM portal, you need to customize your channel manager profiles so that channel managers can manage partners. For information on customizing your channel managers, see About PRM Channel Manager User Management.

Partner users are external to your organization but sell your products or services through indirect sales channels. Your partner users use a PRM portal to log in to Salesforce. Once logged in, they can access whatever information you make available to them. You must take steps to protect your organization's confidential or internal information. For information on customizing your partner users, see About PRM Partner User Management.

Enabling Lead Conversion for Partner Users

User Permissions Needed	
To create, edit, or delete profiles:	"Manage Users"
To configure the PRM app:	"Customize Application"

You may choose to allow your partner users to convert leads. Lead conversion by partners is very similar to the standard lead conversion process your other users follow.

To allow partner users to convert leads:

1. Ensure that the following permissions are enabled on the partner profile:
   - "Convert Leads"
   - "Edit" on leads
   - "Edit" on accounts
   - "Edit" on contacts
   - "Create" on contacts
   - "Create" on accounts
   - "Create" on tasks

   For more information on setting user permissions on profiles, see "User Permissions on Profiles" in the Salesforce online help.
2. Ensure that partner users have Read Only access to the Global Portal Settings folder on the Documents tab. The Global Portal Settings folder is automatically created when you install PRM.
3. Create `Lead Status` values that work with your channel business processes.
4. Click **Setup ➤ Exchange ➤ Installed Apps**.
5. Click **Configure** next to the Salesforce PRM app. A new window opens to display the PRM Portals setup page.
6. Select the name of the portal you want to configure.
7. In the Available Tabs section, click **Edit** next to the Leads tab.
8. Select `Automatic Lead Conversion`.
9. To map standard lead fields to custom opportunity fields, select `Standard Field Mapping`, then map each standard field to the appropriate custom field.

   Tip: Because partner users do not have access to contacts, mapping standard lead fields to custom opportunity fields allows you to share information with the partner user that they normally would not see.

10. Click **Save**.

To convert a lead, a partner user will change the status of the lead to a converted lead status, such as "Converted."

How Lead Conversion Works in PRM Portals

Lead conversion in the PRM portal works slightly different than it does in Salesforce, primarily because partner users do not have access to accounts and contacts. Instead, in the PRM portal, the lead conversion process attempts to match the lead `Email Address` with the `Email Address` of contacts with the following results:

- If one contact is found with a matching email address, and the contact has an associated account, the conversion process uses the existing contact and account to create a new opportunity that is associated with that account.
- If one contact is found with a matching email address, and the contact does not have an associated account, a new contact, account, and opportunity are created.
- If there is more than one contact that has a matching email address:
  - If only one of the contacts is owned by the partner user, and there is an account associated with the contact, a new opportunity is created that is associated with that account.
  - If only one of the contacts is owned by the partner user, and there is no account associated with the contact, a new contact, account, and opportunity are created.

  - If more than one contact with a matching email address is owned by the partner user, the first contact found is used. If there is an account associated with that contact, a new opportunity is created that is associated with that account. If there is no account associated with the contact, a new account, contact, and opportunity are created.
  - If none of the matching contacts are owned by the partner user, then the first contact found is used. If there is an account associated with that contact, a new opportunity is created that is associated with that account. If there is no account associated with the contact, a new account, contact, and opportunity are created.
- If no email matches are found, a new contact, account, and opportunity are created.

Note: Assignment rules cannot be triggered by actions in the PRM portal.

Managing PRM Portals

User Permissions Needed	
To create, edit, and delete PRM portals:	"Customize Application"

When partner relationship management is enabled, a default PRM portal is automatically created. You can customize this portal to fit your needs, or you can create new portals as needed. Having multiple portals allows you to have a custom portal for each type of partner you have. For example, you may have partners in different geographies, or you may have different partner levels based on the amount of sales they have generated. Each type of partner can be associated with a unique PRM portal that you have customized for them.

Note: Do not create a portal for every partner account. Organize your partners together into logical groups.

To customize PRM portals:

1. Click **Setup ➤ Exchange ➤ Installed Apps**.
2. Click **Configure** next to the Salesforce PRM app. A new window opens to display the PRM Portals setup page.

From the PRM Portals setup page, you can perform any of the following actions.

- To create a new PRM portal, click **New**. See "Defining a PRM Portal" in the Salesforce online help.
- To assign partner users to a portal, click **Portal Assignment**. See Assigning Partner Users to a PRM Portal.
- To reset the default portal, click **Reset Default Portal**. Resetting the default portal removes any customizations you have made to your default portal.
- To view and customize the settings for an existing portal, select the portal name. See Configuring a PRM Portal.
- To edit the details of an existing portal, click **Edit** next to a portal name. In addition to being able to set the portal name, you can also configure what objects to include in search, the partner account owner title, change the logout URL, and manage the look and feel of the portal. See Configuring a PRM Portal.
- To preview an existing partner portal, click **Preview**.

  A new window opens with a preview of your portal.
- To delete a portal, click **Del**. A warning dialog prompts you to confirm the deletion. Any users assigned to a deleted portal are reassigned to the default portal. None of the associated documents are deleted. You cannot delete the default portal.

Creating Partner Accounts

User Permissions Needed	
To view accounts:	"Read" on accounts
To create accounts:	"Create" on accounts
To enable a partner account:	"Manage Partners"

Partner accounts are business accounts that a channel manager uses to manage partner organizations, partner users, and activities. Each company with which you partner should be added to Salesforce as a business account. Channel managers are associated with partner accounts by account ownership. A channel manager who owns a partner account can access all the information and manage all the activities of the partner account. This allows the channel manager to easily keep up-to-date on partner activities.

Note: If your organization has person accounts, they cannot be used as partner accounts. Only business accounts can be used as partner accounts.

To create a partner account:

1. Create a new business account. See Creating Accounts.
2. Then, click **Enable As Partner**.
3. A confirmation dialog will open. Select **Yes, I want to enable this account as a partner account.**.
4. Click **Confirm**.

Once you have a partner account created, you can add partner users to the account as contact records. Partner users are Salesforce users with limited capabilities focused on managing leads. Partner users log in to Salesforce through the PRM portal.

Note: Partner accounts cannot be deleted.

Salesforce Console

Available in: **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

With Winter '07 comes the Salesforce console—a highly optimized AJAX desktop that can dramatically speed up support, sales, and telemarketing functions in your organization. Increase business efficiency for users by setting up the console to consolidate all related data in Salesforce on one screen, without any plug-ins or client software. Information displayed in the console gives users greater insight into the data they work with because they can see exactly how it is related.

Implementation Tips

- Custom s-controls work in the console just as they work in Salesforce.
- You cannot report on the use of the console in your organization.
- You can add up to five related lists to mini page layouts.
- Search results cannot be configured to display in the console's list view frame.
- Enterprise, Unlimited, and Developer Edition users with the "Customize Application" permission can assign a console layout to a profile via the profile detail page by clicking the **Edit** link in the Console Settings section.
- You cannot change the position of where the console's list view, detail view, and mini view display on a screen.

- There is no console API to access.

Best Practices

- Do not set up a console for occasional Salesforce users. Users who view Salesforce at least three hours a day benefit most from the console.
- Customize mini page layouts for those objects that are needed for specific business functions. For example, customize the account and contact mini page layouts if you plan on using the console for customer support purposes.
- Add custom objects to console layouts so that users have the option to display list views of custom object data in the console.
- Inform users to occasionally click the **Refresh** button in the list view so that the list view reloads with any record updates that have occurred since they began viewing the list.
- Administrators can customize many different console layouts to display a variety of objects in the console's list view, and then assign those console layouts to different user profiles to satisfy the business needs of different users.
- Administrators should set the Console tab visibility setting on user profiles to Default On so users have no difficulty finding the console.
- Administrators should add the Console tab to custom apps so that users can access the console from specific apps. For more information, see "Managing Custom Apps" in the Salesforce online help.

About the Salesforce Console

What is the Console?

The console is a tab that combines a list view and related records into one screen with different frames so that users have all the information they need when interacting with Salesforce. By using the console, users can quickly find, view, and edit records such as cases, accounts, and contacts with fewer clicks and without switching back and forth between screens. Administrators choose the information displayed in the console to accommodate your varied and evolving business needs.

Before setting up or using the console, see "Console Concepts" in the Salesforce online help for a description of console terminology.

Console Concepts

Review the following terminology used to describe the components of the Console tab:

Frames
Separate sections of the console which each display a different record, list view, or other page.

List View
The console's top frame which is a list view of records based on specific criteria. The list views you can select to display in the Console tab are the same list views defined on the tabs of other objects. You cannot create a list view within the console.

Detail View
The console's center frame which is the detail page view of any record selected from any of the console's other frames. The detail view displays the same page layouts defined for the object's detail pages. When a record is displayed in the detail view, it is highlighted in the list view.

Mini View
The console's right frame which displays the records associated with the record displayed in the detail view. The fields displayed in the mini view are defined in the mini page layouts by an administrator. The mini view does not display if the record in the detail view does not have any records associated with it.

Sidebar
The console's left frame which displays recent items, the Recycle Bin, and other components, just like the sidebar displayed on every Salesforce page. To show or hide the sidebar in the console, click the border of the left frame.

Related Objects
Records chosen by an administrator to display in the mini view when records of a particular type are shown in the detail view. For example, when a case is in the detail view, an administrator can choose to display an associated account, contact, or asset in the mini view.

Mini Page Layouts
A subset of the items in a record's existing page layout that administrators choose to display in the mini view. Mini page layouts inherit record type and profile associations, related lists, fields, and field access settings from the page layout.

Console Layout
Objects chosen by an administrator to display in the list view frame of the console. For example, if an administrator adds cases to a console layout, then users whose profiles are assigned to that console layout can see list views of cases in the console's list view frame.

Setting Up the Console

User Permissions Needed	
To set up the console:	"Customize Application"

You can quickly set up the Console tab so that users have all the information they need on one screen when working with Salesforce. To set up the console:

1. Create console layouts to define what objects are available to users in the console's list view frame.
2. Choose the related objects to show in the mini view.
3. Define mini page layouts to customize the fields and related lists of the objects that display in the console's mini view.
4. Assign profiles to a console layout to provide users access to specific objects in the console's list view.
5. Add the Console tab to custom apps so that users can access the console from specific apps.

Creating Console Layouts

User Permissions Needed	
To create console layouts:	"Customize Application"

To create a new console layout:

1. Click **Setup ➤ Customize ➤ Console ➤ Console Layouts**.
2. Click **New** and optionally choose an existing layout to clone.
3. Enter a name for the new layout.
4. Click **Save**.
5. Click **Edit** in the Selected List Views section.
6. To add or remove objects to the layout, select an object, and click the **Add** or **Remove** arrow.

   To change the order of the objects as they will appear in the console's list view frame, select an object in the Selected List box, and click the **Up** or **Down** arrow.

A user can only view objects in the console's list view frame if those objects are added to the console layout to which their profile is assigned.

7. Click **Save**.

Choosing Related Objects for Page Layouts

User Permissions Needed	
To set up the console:	"Customize Application"

While you can choose which related objects appear in the mini view of the console, you can only choose objects with a lookup relationship on the primary object. For example, from the cases object, you can choose account and contact because cases have account and contact lookup fields. To choose related objects:

1. Click **Setup ➤ Customize** and choose a standard object, or click **Setup ➤ Build ➤ Custom Objects** and choose a custom object.

   The standard or custom object you choose in this step represents the record in the detail view of the console, and the related objects in the mini view will be records associated with it.
2. Select **Page Layouts**, and choose a page layout name.
3. Click **Related Objects**.
4. Select which records associated with the record in the detail view will be displayed in the mini view. You can only select objects if they are defined as lookup relationships and those lookup fields are included on the page layout.

   You can change the order of how related objects display in the mini view by clicking the up and down arrows.
5. Click **Save**.
6. Next, define mini page layouts to specify what fields and related lists to show for the related objects in the mini view.

Tip: The fewer related objects you add to the console's mini view, the easier it is for users to read the information displayed. The console can also process data faster when fewer related objects are added to the mini view.

Note: You cannot choose related objects for the Close Case Layout or the Log a Case Page and View Cases Page layouts on the Self-Service Portal.

Defining Mini Page Layouts

User Permissions Needed	
To set up the console:	"Customize Application"

You can define mini page layouts for the records that appear in the mini view of the console. A mini page layout contains a subset of the items in an existing page layout. Mini page layouts inherit record type and profile associations, related lists, fields, and field access settings from their associated page layout. The visible fields and related lists of the mini page layout can be further customized, but the other items inherited from the associated page layout cannot be changed on the mini page layout itself.

The event mini page layout is used for the event detail overlay, not the console.

To define a mini page layout:

1. Click **Setup ➤ Customize** and choose a standard object, or click **Setup ➤ Build ➤ Custom Objects** and choose a custom object.
2. Select **Page Layouts**, and choose a page layout name.
3. Click **Mini Page Layout**.
4. Select which fields and related lists will be displayed for this type of record in the mini view. For each related list you select, choose which fields to display in that related list.
   - You can select all of the available fields and up to five related lists to display in the console; however, it is recommended that you only select a few so that users do not have to scroll to find information.
   - Selected fields and related lists display in the console even when they do not contain content.
   - Fields marked `Always Displayed` on page layouts are automatically included on the mini page layout and cannot be removed unless they are removed from the page layout.
   - Field properties on the page layout determine field properties on the mini page layout. For example, if a field is read-only on the page layout, that same field will be read-only on the mini page layout. To change the field properties of fields on the mini page layout, you must change the field properties of fields on the page layout. Note that the console respects field-level security in organizations where it is available.
   - To add or remove fields, select a field name, and click the **Add** or **Remove** arrow. To change the order of the fields, select a field name in the Selected list box, and click the **Up** or **Down** arrow. Click **Save** when finished.
   - The order of related lists on the page layout determines the order of related lists on the mini page layout. To change the order of related lists on the mini page layout, you must change the order of related lists on the page layout, then select the mini page layout and click **Save**.
5. Click **Save**.

Note: You cannot define mini page layouts for the Close Case Layout or the Log a Case Page and View Cases Page layouts on the Self-Service Portal.

Assigning Console Layouts

User Permissions Needed	
To assign console layouts:	"Customize Application"

After you create console layouts, assign which console layouts users see. A user's profile determines which console layout he or she sees.

To assign console layouts:

1. Click **Setup ➤ Customize ➤ Console ➤ Console Layouts**.
2. Click **Console Layout Assignment**.
3. Select a console layout to assign to a profile via the drop-down list.
4. Select the Console tab visibility settings for a profile via the drop-down list. You can only select Console tab visibility settings for profiles assigned to a console layout.

   The following settings apply to tab visibility.

Setting	Description
`Default On`	Show the tab by default for users with this profile. Individual users can override this setting for their login; see "Customizing Your Display" in the Salesforce online help. The Home page is always set to `Default On`.

Setting	Description
`Default Off`	Hide the tab by default for users with this profile. Individual users can override this setting.
`Tab Hidden`	Hide the tab and do not allow individual users to override this setting in their personal customization. Making a tab hidden does not hide the records for that tab; to prevent a user from ever seeing records of that type, remove the "Read" permission on that type of data.

5. Click **Save**.

Note: Enterprise, Unlimited, and Developer Edition users with the "Customize Application" permission can assign a console layout to a profile via the profile detail page by clicking the **Edit** link in the Console Settings section.

Displaying the Console

You can start using the Console tab after your administrator has set it up as described in "Setting Up the Console" in the Salesforce online help.

To display the console, click the Console tab. To exit the console, select any tab.

No data displays in the console if the selected list view does not contain any records.

Note: You can only access the Console tab if your administrator has assigned your user profile to a console layout and set your Console tab visibility setting to either Default On or Tab Hidden. If your Console tab visibility setting is set to Tab Hidden, then you can customize your display to see the Console tab. For more information, see "Customizing Your Display" in the Salesforce online help.

Navigating within the Console

What you click in the Console tab determines the frame a record displays in.

In the detail view, clicking:

- Buttons or links on the record displays the record in the detail view.
- **Email this page** ( ) displays a link to the record in an email.
- **Link to this page** ( ) displays the record and the URL of the record in a new browser window.
- **Printable View** ( ) displays a printable view of the record in a popup window.
- **Customize Page** ( ) allows you to customize the display of related lists in the detail view of the record. For more information, see "Customizing Your Display" in the Salesforce online help.
- **Help for this page** ( ) displays an online help page for the record.

In the mini view, clicking:

- Links displays the record in the detail view. Associated records display in the mini view.
- **View** displays the entire record in the detail view.
- **Edit** displays a mini edit page in the mini view.

  To edit a field not displayed on the mini edit page, click **View** to display the entire record in the detail view, and then click **Edit** from the detail view.

- **Show more** below a related list displays more of the records included in the related list in the mini view. **Show more** displays an additional five records every time you click it, up to a maximum of 100.

Note: The mini view does not display if the record in the detail view does not have any records associated with it.

In the list view, clicking:

- A link displays the record in the detail view.
- **Refresh** reloads the list view with any updates that have occurred to the records since you began viewing the list.
- A column heading sorts that column in ascending order. Click the heading a second time to sort in descending order.
- A letter at the bottom of the list view filters your list view records by the letter.
- **fewer** or **more** at the bottom of the list view displays a shorter or longer list.
- **Previous Page** or **Next Page** at the bottom of the list view displays the previous or next page of items on the list.
- See "Using the Console List View" in the Salesforce online help for more information.

In the sidebar, clicking:

- The border of the left frame opens the sidebar in the console. Click the border of the left frame a second time to hide the sidebar.
- A record under `Recent Items` displays the record in the detail view.
- **Calendar** displays the calendar in the detail view.
- **Recycle Bin** displays the Recycle Bin in the detail view.

Tip: Clicking the back or forward buttons on your browser cycles you through pages in the console. You will not immediately exit the console by clicking them.

Note: Not all pages open within the console. For example, clicking **Printable View**, **Check Spelling**, **Help for this Page**, lookup icons, email addresses, and custom links set to open in a new browser window all open outside of the console in a new browser window or popup.

Using the Console List View

The console's list view allows you to quickly perform actions within Salesforce without leaving the console.

Display list views

From the drop-down list in the top left of the list view frame, select an object, and then select a list view of the object to display in the console's list view frame. You cannot create a list view within the console.
Click **Refresh** to reload the list view with any updates that have occurred to the records since you began viewing the list. The refresh button automatically changes colors to notify you when updates have occurred to records in the list view.
Records italicize in the list view when you edit them in the detail view. This is to show you which records you have edited in the list view.

Search

Enter keywords in the search box above the list view and click **Go!** to perform an advanced search across all searchable records you can access in your organization. Terms in an advanced search are treated as separate words rather than a phrase and may be found in different indexed fields within a record. So, searching for *Pat Powers* in advanced search will find a contact named "Pat P Powers" as well as a contact

named “Pat Smith” with an email address of “smith@powers.com.” Search results display in the detail view.

Create records
From the New drop-down list, select any object to create a new record. New record pages display in the detail view.

View recent items
From the Recent Items drop-down list, you can choose to display any of the 10 records you most recently viewed. Recent items display in the detail view.

Perform mass actions
Select the checkbox next to items in the list view, and from the Mass Action drop-down list, choose the action you want to perform on all the selected records.

Note: No data displays in the console if the selected list view does not contain any records.

Enhanced Activity Management and Popup Reminders

Available in: **All** Editions

Managing your calendar is now faster and easier than ever. With the latest enhancements, you can see personalized popup reminders, share event and task records with your fellow team members, hover your mouse over calendar items to open interactive overlays, and more.

Popup Reminders on Tasks and Events
You can now add popup reminders to tasks and events. Reminders notify you of an upcoming task or event. Reminders display in a small browser popup window when you are logged in to Salesforce, and, depending on your settings, will play a reminder sound. The reminder window includes details about the activity, including the start time, the name of the activity, what the activity is related to, and, for events, the location of the event. Click **Setup ➤ My Personal Information ➤ Reminders** to customize your default reminder settings. You can override your default reminder settings when you are editing an activity.

Calender User Interface Enhancements
The single and multi-user calendar views now present information in an easier to read, graphical format. Plus, if you mouse-over an event on any of the calendar views, you can see the event details overlay, a small window that displays additional information about the event. Event detail overlays are configured using the event mini page layout, and respect page layout, record type, and profile settings. On the event detail overlay, you can edit, delete, or check your availability for the event.

Activities Sharing Model (Unlimited, Enterprise, and Professional Editions only)
There is a new Controlled by Parent organization-wide default you can set as the default access level for activities. When selected, the Controlled by Parent default level allows users to perform an action (such as view, edit, transfer, and delete) on an activity based on whether he or she can perform that same action on the records associated with the activity. For example, if a task is associated with the Acme account and the John Smith contact, then a user can only edit that task if he or she can also edit the Acme account and the John Smith record.
To edit your organization-wide access level for activities, click **Setup ➤ Security Controls ➤ Sharing Settings ➤ Edit** and select Controlled by Parent from the `Default Activity Access` drop-down list. Then, click **save**.

Custom Links for Tasks and Events

You can now add custom links for tasks and events. Navigate to **Setup ➤ Customize ➤ Activities ➤ Task Buttons and Links** or **Setup ➤ Customize ➤ Activities ➤ Event Buttons and Links** to set up custom links for your tasks and events.

Events Security

With Winter '07, you must have at least read access to the contacts and leads you invite to a group event. You must have at least "Add Events" access on a resource to invite it to a group event. Previously, users were able to invite contacts, leads, and resources to a group event even if they had no sharing access to the invitee. Note that existing invitees on group events will remain unaffected, whether or not the group event organizer has sharing access to them.

Client Management

In Winter '07, Client management streamlines the entry and maintenance of contacts who are not associated with corporate entities, while leveraging all of the robust customer relationship management capabilities that Salesforce offers. It is a complete end-to-end solution for everything from client acquisition to client loyalty.

Client management is made possible through *person accounts*, which are an exciting major enhancement to the Salesforce data model. Person accounts represent the individual clients with whom you do business. If your company operates on a business-to-consumer (B2C) model, person accounts are a simple yet powerful way to manage the entire life cycle of each customer relationship.

In essence, a person account is an account to which a *person account record type* (a new class of account record types) has been assigned. Such record types seamlessly fuse the rich functionality of contacts onto the account—enabling the sending of emails, participation in campaigns, conversion from leads, and much more.

Note: Person accounts are available as part of a limited release program. Contact salesforce.com for more information.

Implementation Tips

Person accounts are not yet generally available. For information on participating in the ongoing limited release program, please contact your salesforce.com representative.

Follow the steps below to get started with person accounts. Please note that the order of the following steps is only a recommendation; the steps after Step 1 are optional based on your organization's unique configuration and also can be performed at any time.

1. Enable person accounts:
   a. As a prerequisite, create at least one record type for accounts.
   b. Person accounts are available upon request for Enterprise, Unlimited, and Developer Edition organizations as part of a limited release program. After you have completed the prerequisite above, contact salesforce.com to make the request.
   c. Please note that enabling person accounts is permanent and cannot be reverted. If you are an existing customer, we recommend creating a Salesforce Sandbox to preview how person accounts will affect your organization.
2. Customize the names of tabs and field labels:
   a. Rename the Accounts tab name, the `business account` field label, and the `person account` field label to meet your business requirements.
   b. Rename the Contacts tab name and the `business contact` field label to meet your business requirements.
   c. Rename the Partners related list to "Related Accounts," "Relationships," or a similar term that reflects how your person accounts relate to each other.
3. Customize person account page layouts:

   a. Go to **Setup ➤ Customize ➤ Accounts ➤ Person Accounts ➤ Page Layouts**.
   b. As desired, add contact fields and related lists to the page layout.

4. Customize person account record types. When person accounts are enabled, a default person account record type is automatically created. You can modify this default person account record type, and you can also add additional person account record types.
5. Assign person account record types to profiles.
6. Add the person account icon to search results and lookup dialogs—the icon corresponds to the `Is Person Account` field. The icon visually differentiates person accounts from business accounts in account lists and from business contacts in contact lists. If your organization works exclusively with person accounts, then adding the icon is not necessary.
7. Similarly, add the person account icon and other person account fields as columns in public list views:

   - On the Accounts tab.
   - On the Contacts tab.
   - For Mass Email.
   - For Mass Stay-in-Touch requests.

   In addition, configure the search criteria of public list views so person accounts are included or excluded appropriately.

   Note that individual users will need to update their personal list views as well.
8. Customize public reports and customize public dashboards to include person account information.

   Note that individual users will need to update their personal reports and dashboards as well.
9. Add the `Is Person Account` field to rules, such as:

   - Workflow rules.
   - Assignment rules.
   - Escalation rules.
   - Field validation rules.
   - Territory assignment rules.

10. Customize partner roles for person accounts—for example, add "Spouse," "Neighbor," "Attorney," and "Accountant."
11. Customize leads:

    Note: Leads with a blank `Company` field are converted to person accounts. The default person account record type for your profile is applied to the new person account. Similarly, leads with a value in the `Company` field are converted to business accounts. The default business account record type for your profile is applied to the new business account.

    - Create lead record types for person accounts.
    - Create lead page layouts for business accounts and person accounts. Page layouts for leads that will become business accounts must contain and require the `Company` field. Page layouts for leads that will becomeperson accounts must not contain the `Company` field.

12. Convert existing account-contact pairs to person accounts:

    a. Create one-to-one relationships between account and contact records.
    b. As much as reasonably possible, edit the accounts so they contain all desired field values.
    c. Using Apex API 8.0, update the record types of the desired accounts to convert them to person accounts. We recommend running a test conversion in your Salesforce Sandbox.

13. Update integrations—for more information on the Apex API, visit the Apex Developer Network.

Best Practices

- If your organization exclusively uses person accounts (meaning you never use business accounts, which have a Contacts related list), consider giving the Accounts and Contacts tabs the same name. However, to differentiate the tabs, append a character such as a period (.) or asterisk (*) to the Contacts tab name. For example, the Accounts tab becomes **Clients** and the Contacts tab becomes **Clients***.
- Alternatively, modify user profiles to prevent the Contacts tab from displaying: change the visibility setting for the Contacts tab to "Default Off" or "Hidden."
- Consider renaming the standard field `Account Site` and repurposing it as a unique identifier for person accounts. For example, you could rename the field "Client Number" and use it to store a number that a uniquely identifies each person. By default this field displays in many list views and other areas throughout Salesforce, and can help differentiate people who have similar names.

About Client Management Using Person Accounts

What is an Account?

Accounts are your organization's customers, competitors, and partners. Each account stores information such as name, address, and phone numbers. For each account, you can store related information such as opportunities, activities, cases, partners, contracts, and notes.

The Accounts tab displays a home page that lets you quickly create and locate all types of accounts. You can also sort and filter your accounts using standard and custom list views. In addition, this tab lets you view and edit detailed information on each account to which you have access.

If your organization has been enabled with person accounts, you have two different kinds of accounts: business accounts and person accounts. Business accounts represent the other *companies* with which your organization does business. For business accounts, the individuals who work at those companies are represented by contacts. Person accounts represent the *individual consumers* with whom your company does business, such as a financial services client, an online shopper, or a vacation traveler. Depending on your organization's business model, you may use business accounts, person accounts, or both. See "What is a Person Account?" in the Salesforce online help for more information.

If your organization has been enabled with PRM, you can create partner accounts. Partner accounts are business accounts that a channel manager uses to manage partner organizations, partner users, and activities.

Note: In the online help and other Salesforce documentation, the word "account" by itself always refers to both business accounts and person accounts. The terms "business account" and "person account" are used when there are differences between the two kinds of accounts.

What is a Person Account?

Note: Person accounts are not enabled by default in Salesforce. To request person accounts, contact salesforce.com.

A person account is an individual consumer with whom you do business, such as a financial services client, an online shopper, or a vacation traveler. Person accounts are applicable to organizations that operate on a business-to-consumer model as opposed to a business-to-business model.

In a business-to-business model, there is a natural differentiation between the other businesses with whom you work and the people associated with those businesses. In Salesforce, that translates to accounts and contacts having different fields, features, and tabs. In a business-to-consumer model, because you are providing products or services to people rather than companies or organizations, the distinction between accounts and contacts does not exist. Consequently, person accounts in Salesforce

have a combination of fields from both accounts and contacts, and can be used as contacts in most situations that involve contacts. For example, business accounts do not have standard fields for email address and job title, but person accounts do. Also, person accounts can be associated with campaigns just like contacts, but business accounts cannot. For details on the contact-specific functionality that applies to person accounts, see "Person Account Behaviors" in the Salesforce online help.

The ability for person accounts to act like contacts is made possible by applying an account record type which has special properties. The default name of this record type is "Person Account." Your administrator may have changed the name of this record type, and also may have created more account record types that have the same special properties. For more information on record types, see "Managing Record Types" in the Salesforce online help and "Changing the Record Type Field" in the Salesforce online help.

Note: In the online help and other Salesforce documentation, the word "account" by itself always refers to both business accounts and person accounts. The terms "business account" and "person account" are used when there are differences between the two kinds of accounts.

Person Account Behaviors

Note: Person accounts are not enabled by default in Salesforce. To request person accounts, contact salesforce.com.

Person accounts are accounts that can also be used as contacts in many situations. The following table summarizes the key areas in which person accounts differ from business accounts or have unique considerations:

Salesforce Functionality	Person Account Behavior
Accounts	Person accounts are accounts that support contact fields and capabilities.
Account Merge	Person accounts can only be merged with other person accounts. See "Merging Duplicate Accounts" in the Salesforce online help.
Account Quick Create	On the accounts home page, the fields in the Quick Create area are based on whether the default account record type set on your profile is a person account record type or a business account record type.
Activities	Person accounts can be associated with activities using either the `Name` or `Related To` fields. Like contacts, person accounts can be invited to group events.
Campaigns	Like contacts, person accounts can be added to campaigns and have a Campaign History related list.
Cases	On cases, person accounts can be entered in the `Account Name` field, the `Contact Name` field, or both.
Contacts	In most situations, you can use person accounts as if they were contacts. You can include them in all contact list views except the Recent Contacts list on the contacts home page. Unlike business accounts, person accounts do not have a Contacts related list. However, you can use the Partners related list to track relationships between different person accounts.

Salesforce Functionality	Person Account Behavior
Contact Roles	Like contacts, you can add person accounts to the Contact Roles related list on cases, contracts, and opportunities.
Custom Objects	Custom objects with relationships to either accounts or contacts can be added as related lists on person accounts.
Desktop Integration	Person accounts are not currently supported in Offline Edition, Outlook Edition, Lotus Notes Edition, and Intellisync for salesforce.com.
Email	Like contacts, you can send individual emails and mass emails to person accounts.
Fields	A predetermined combination of standard account and contact fields is available on person account page layouts. In addition, all custom account and contact fields are available. See "Person Account Fields" in the Salesforce online help. Note that some business account fields are not supported for person accounts, such as `Parent Account` and `View Hierarchy`. Also, the `Reports To` field on contacts is not supported for person accounts. You can rename person account field labels so alternate terms display in Salesforce.
Import Wizards	Person accounts have unique import wizards at **Setup ➤ Import ➤ Import My Person Accounts** and **Setup ➤ Data Management ➤ Import Person Accounts**. See "What Is Imported for Person Accounts?" in the Salesforce online help
Icons	Person accounts have an icon with a person ( ), while business accounts have a folder icon ( ). The person account icon can be added to search results, list views, and lookup dialogs using the criteria "`Is Person Account` equals True."
Leads	Leads with a blank `Company` field are converted to person accounts. The default person account record type for your profile is applied to the new person account. Similarly, leads with a value in the `Company` field are converted to business accounts. The default business account record type for your profile is applied to the new business account. See "Converting Leads" in the Salesforce online help and "Assigning Record Types to Profiles" in the Salesforce online help.
List Views	Person accounts appear in both account and contact list views. Add the `Is Person Account` icon to list views to visually differentiate person accounts from other records, and to include or exclude person accounts in a list.
Page Layouts	Person accounts have unique page layouts that can have account fields, contact fields, account custom links, account related lists, and contact related lists. Person accounts page layouts do not support the `Reports To` and `Parent Account` fields.

Salesforce Functionality	Person Account Behavior
Partners	You can use the Partners related list to relate person accounts to each other. We recommend that you rename the Partners related list to "Related Accounts," "Relationships," or a similar term that reflects how your person accounts are connected.
Record Types	Administrators can configure multiple record types for person accounts. A person account can only be changed to another person account record type.
Renamed Tabs and Standard Fields	Administrators can customize the names of tabs and fields related to person accounts, such as: • The Accounts tab name, the `business account` field label, and the `person account` field label. • The Contacts tab name and the `business contact` field label.
Search	Person accounts only appear in account search results. Administrators can add the `Is Person Account` icon to account search layouts in order to differentiate person accounts from business accounts.
Self-Service Portal	Like contacts, person accounts can be enabled as users for your Self-Service portal.
Stay-in-Touch Requests	Like contacts, you can send individual and mass Stay-in-Touch requests to person accounts.
Workflow Rules	Creating or editing a person account triggers account workflow rules. See "Managing Workflow" in the Salesforce online help.

Person Account Fields

Here is a description of the standard fields (in alphabetical order) that make up a person account. Some of these fields may not be visible or editable depending on your page layout and field-level security settings. Fields with "(Contact field)" in the description are contact fields that are supported for person accounts but not business accounts.

Note that this list does not include any custom fields that your administrator may have created. Both account and contact custom fields are available for person accounts.

Field	Description
`Account Currency`	The default currency for all currency amount fields in the account. Amounts display in the account currency and are also converted to the user's personal currency. Available only for organizations that use multiple currencies.
`Account Division`	Division to which the account belongs. Records related to the account, such as contacts and opportunities, automatically inherit the account's division. Available only in organizations that use divisions to segment their data.
`Account Name`	The name of the individual. In person accounts, the account name cannot be edited directly. Instead, Salesforce derives it

Field	Description
	by combining the `First Name` and `Last Name` fields in the appropriate order per the user's language setting.
`Account Name (Local)`	The name of the account translated into the local language.
`Account Number`	Tracking or reference number for account. Up to 40 characters are allowed in this field.
`Account Owner`	Assigned owner of account. Not available in Personal Edition.
`Account Record Type`	Name of the field that determines what picklist values are available for the record. Available in Enterprise, Unlimited, and Developer Editions.
`Account Site`	Name of the account's location, for example, Headquarters or London. Up to 80 characters are allowed in this field.
`Annual Revenue`	Amount of annual reported revenue.
`Assistant`	Name of assistant. Up to 40 characters are allowed in this field. (Contact field)
`Asst. Phone`	Assistant's phone number. Up to 40 characters are allowed in this field. (Contact field)
`Billing Street`	Street address used for billing. Up to 255 characters are allowed in this field.
`Billing City`	City portion of billing address. Up to 40 characters are allowed in this field.
`Billing State/Province`	State or province portion of billing address. Up to 20 characters are allowed in this field.
`Billing Zip/Postal Code`	Zip or postal code portion of billing address. Up to 20 characters are allowed in this field.
`Billing Country`	Country portion of billing address. Up to 40 characters are allowed in this field.
`Birthdate`	Birthday. You can enter a date, or click the *calendar* icon to choose a date. You can add the current date by clicking the date link next to the field. (Contact field)
`Created By`	User who created the account, including creation date and time. (Read only)
`Department`	Associated business or organizational unit. Up to 80 characters are allowed in this field. (Contact field)
`Description`	Description of account. Up to 32 KB of data are allowed in this field. Only the first 255 characters display in reports.
`Do Not Call`	Indicates if the person does not want to be contacted via telephone. (Contact field)
`Email`	Email address. Must be a valid email address in the form: jsmith@acme.com. Up to 80 characters are allowed in this field. (Contact field)

Field	Description
Email Opt Out	The person's email address will not be included in mass emails. (Contact field)
Employees	Number of people employed by the account.
Exclude from territory assignment rules	When checked, shields the account from being evaluated when account assignment rules are run, preventing it from being automatically assigned to territories. Also, if the account is already assigned to territories as a result of assignment rules, checking this box removes the account from those territories. This checkbox only affects rule-based account assignments and has no effect on manual account assignments. See "What is Territory Management?" in the Salesforce online help.
Fax	Fax number. Up to 40 characters are allowed in this field.
Fax Opt Out	Indicates if the person has requested not to be included in broadcast faxes. (Contact field)
First Name	The first or given name of the individual. Up to 40 characters are allowed in this field. (Contact field)
Gold Sheet	Miller Heiman Gold Sheet for the account. Displays only for Miller Heiman partner organizations.
Home Phone	Person's home phone number. Up to 40 characters are allowed in this field. (Contact field)
Industry	Primary business of account. Entry is selected from a picklist of available values, which are set by an administrator. Each picklist value can have up to 40 characters.
Last Name	The surname or family name of the individual. Up to 80 characters are allowed in this field. (Contact field)
Last Stay-in-Touch Request Date	The date that the most recent Stay-in-Touch request was sent. (Contact field)
Last Stay-in-Touch Save Date	The date that the most recent Stay-in-Touch request was returned and merged. (Contact field)
Lead Source	Record source, for example, Advertisement, Partner, or Web. Entry is selected from a picklist of available values, which are set by an administrator. Each picklist value can have up to 40 characters. (Contact field)
Mailing Street	Street mailing address. Up to 255 characters are allowed in this field. (Contact field)
Mailing City	City portion of mailing address. Up to 40 characters are allowed in this field. (Contact field)
Mailing State/Province	State or province portion of mailing address. Up to 20 characters are allowed in this field. (Contact field)
Mailing Zip/Postal Code	Zip or postal code portion of mailing address. Up to 20 characters are allowed in this field. (Contact field)

Field	Description
Mailing Country	Country portion of mailing address. Up to 40 characters are allowed in this field. (Contact field)
Mobile	Cellular or mobile phone number. Up to 40 characters are allowed in this field. (Contact field)
Modified By	User who last changed the account fields, including modification date and time. This does not track changes made to any of the related list items on the account. (Read only)
Other Street	Street address portion of additional address. Up to 255 characters are allowed in this field. (Contact field)
Other City	City portion of additional address. Up to 40 characters are allowed in this field. (Contact field)
Other State/Province	State or province portion of additional address. Up to 20 characters are allowed in this field. (Contact field)
Other Zip/Postal Code	Zip or postal code portion of additional address. Up to 20 characters are allowed in this field. (Contact field)
Other Country	Country portion of additional address. Up to 40 characters are allowed in this field. (Contact field)
Other Phone	Additional phone number listing. Up to 40 characters are allowed in this field. (Contact field)
Ownership	Ownership of company, for example, public or private. Entry is selected from a picklist of available values, which are set by an administrator. Each picklist value can have up to 40 characters.
Phone	Primary phone number of account. Up to 40 characters are allowed in this field.
Rating	Categorization of how you rate this account, for example, Hot, Cold. Entry is selected from a picklist of available values, which are set by an administrator. Each picklist value can have up to 40 characters.
Run territory assignment rules on save	When checked, causes account assignment rules to run when the account is edited and saved. When customizing the page layout for accounts, an administrator can control whether this checkbox displays and whether it is checked by default. See "What is Territory Management?" in the Salesforce online help.
Salutation	Title for addressing the person, for example, Mr., Ms., Dr., or Prof. Entry is selected from a picklist of available values, which are set by an administrator. Each picklist value can have up to 40 characters. (Contact field)
Shipping Street	Primary mailing or shipping street address of account. Up to 255 characters are allowed in this field.
Shipping City	City portion of primary mailing or shipping address. Up to 40 characters are allowed in this field.

Field	Description
Shipping State/Province	State or province portion of primary mailing or shipping address. Up to 20 characters are allowed in this field.
Shipping Zip/Postal Code	Zip or postal code portion of primary mailing or shipping address. Up to 20 characters are allowed in this field.
Shipping Country	Country portion of primary mailing or shipping address. Up to 40 characters are allowed in this field.
SIC Code	Standard Industrial Classification code of the account's main business categorization, for example, 57340 for Electronics. Up to 10 characters are allowed in this field.
Territories	The territories to which the account has been assigned. See "What is Territory Management?" in the Salesforce online help.
Ticker Symbol	Listing of company's exchange and stock symbol, for example, NASDAQ: ACME. Up to 20 characters are allowed in this field.
Title	Person's position within his or her organization. Up to 80 characters are allowed in this field. (Contact field)
Type	Type of account, for example, Customer, Competitor, or Partner. Entry is selected from a picklist of available values, which are set by an administrator. Each picklist value can have up to 40 characters.
Custom Links	Listing of custom links for accounts as set up by your administrator.
Website	URL of account's website, for example, www.acme.com. Up to 255 characters are allowed in this field; only the first 50 are displayed.

Enhanced Territory Management

With Winter '07, territory management allows sales managers to oversee complex sales organizations more easily and efficiently. Whether your territories are aligned by region, industry, channel, product line, or other criteria, multilevel territory hierarchies and automated rule-based account assignment enable accurate visibility, forecasting, and reporting for every layer in your territory structure.

Implementation Tips

An implementation guide for territory management is available. Please see Deploying Territory Management.

Best Practices

Define territory list views

Account and opportunity list views can be restricted by "My Territories" or "My Territory Teams." "My Territories" means records associated with territories to which you belong. "My Territory Teams" means records associated with either territories to which you belong or territories below you in the territory hierarchy.

Configure reports with territories

- Territory fields are available in account reports, activity reports that include accounts, opportunity reports, and user reports.
- Account reports support the following new options:
  - The `Territories` filter can be set to "All," "Multiple Territories," or "Missing Territory."
  - In the `View` filter, "My territory team's accounts" shows accounts that belong to your territories and your territories' descendants.
- Opportunity reports support the following new options:
  - The `Territories` filter can be set to "All" or "Missing Territory."
  - The `Hierarchy` filter can be set to "Role" or "Territory."
  - In the `Relationship to Opportunity` filter, "My team's opportunities" shows your opportunities and opportunities owned by all of your subordinates in the role hierarchy. If your organization uses territory management, the effect of this option depends on the value of the `Hierarchy` filter. If you select "Role," you see your opportunities and opportunities owned by all of your subordinates in the role hierarchy. If you select "Territory," you see opportunities that are associated with your territories and your territories' descendants.

About Territory Management

What is Territory Management?

Territory management is an account sharing system that grants access to accounts based on the characteristics of the accounts. It enables your company to structure your Salesforce data and users the same way you structure your sales territories. Particularly if your organization has a private sharing model, you may need to grant users access to accounts based on criteria such as zip code, industry, revenue, or a custom field that is relevant to your business. You may also need to generate forecasts for these diverse categories of accounts. Territory management solves these business needs and provides a powerful solution for structuring your users, accounts, and their associated opportunities and cases.

Note: Account ownership and its effect on record sharing remains valid and unchanged when territory management is in use.

Key benefits of territory management include:

- The ability to use account criteria to expand a private sharing model.
- Support for complex and frequently changed sales organization structures.
- Support for transferring users between territories, with the option to retain opportunities.
- Multiple forecasts per user, based on territory membership.
- Territory-based sales reports.

Note: Territory management only affects accounts and the standard objects that have a master-detail relationship to accounts. For example, opportunities are included in territory management but leads and activities are not.

What is a Territory?

A territory is a flexible collection of accounts and users where the users have at least read access to the accounts, regardless of who owns the account. By configuring territory settings, users in a territory can be granted read, read/write, or owner-like

access (that is, the ability to view, edit, transfer, and delete records) to the accounts in that territory. Both accounts and users can exist in multiple territories. You can manually add accounts to territories, or you can define account assignment rules that assign accounts to territories for you.

Not only can you control access to accounts for users in each territory, you can also control users' access to the opportunities and cases associated with the accounts in the territory, regardless of who owns the records. For more information, see "Territory Fields" in the Salesforce online help.

What is a Territory Hierarchy?

Territories exist in a hierarchy which you can set up with as many nested levels as you wish. For example, you could create a top-level territory named "Worldwide Sales" that has the child territories "North America," "Europe/Middle East," "Latin America," "Africa," and "Asia/Australia." "North America" might have the child territories "Canada" and "United States." "United States" might have the child territories "Western," "Central," "Southern", and "Eastern." Finally, "Western" might have the child territories "California," "Oregon," "Washington," "Nevada," "Arizona," and "Utah." To see a graphic of an example territory hierarchy, click here.

Note that territory hierarchies do not have to be focused on geography; they can be defined however you like. For more information, see "Building Your Territory Hierarchy" in the Salesforce online help.

How Do Territories Affect Forecasting?

When you enable territory management for your organization, your forecast data is derived from the opportunities that are associated with the accounts in your territories. Users will have a different forecast for each territory to which they are assigned. For example, if you are assigned to both "California" and "Arizona," you will have one forecast for the opportunities you have in "California," and another forecast for the opportunities you have in "Arizona." See "Viewing Customizable Forecasts" in the Salesforce online help.

Enabling Territory Management

User Permissions Needed	
To enable territory management:	"Manage Territories"

Territory management is not enabled by default in Salesforce. To request territory management for your organization, contact salesforce.com.

You must meet the following prerequisites before enabling territory management:

- Your organization must be using customizable forecasting in order to enable territory management. If you do not know whether you have customizable forecasting, see "Do I Have Customizable Forecasting?" in the Salesforce online help.
- Follow the steps in the Deploying Territory Management Guide to prepare your organization for territory management.

After you have completed the prerequisites, you will be ready to turn on territory management for your organization:

1. In Salesforce, go to **Setup ➤ Manage Territories ➤ Settings**.
2. Optionally, change the organization-wide territory management settings that are configurable from the Territory Settings page. See. "Configuring Territory Management Settings" in the Salesforce online help.
3. There are two different options for enabling territory management, which depend on your preference to retain or purge preexisting forecast data. Click either **Enable Territory Management** or **Enable Territory Management from Scratch**.

What the Enable Territory Management Button Does

When you click this button, your organization's current forecast hierarchy and forecast data are automatically copied to the territory hierarchy as follows:

- The name of your organization is set as the top of the territory hierarchy.
- For each role in the forecast hierarchy, a corresponding territory is created in the new territory hierarchy.
- Active Salesforce users are added to territories based on their roles.
- Opportunities are assigned to the opportunity owner's territory.
- Accounts are not assigned anywhere in the territory hierarchy.
- Until you add or edit territories, your forecasts will work the same as they did before you enabled territory management.

What the Enable Territory Management from Scratch Button Does

When you click this button, the following occurs:

- All preexisting forecast data is deleted.
- An empty territory hierarchy is created.

This button is only recommended when you are setting up a brand new organization in Salesforce that does not have an existing forecast hierarchy.

Caution: ***Irreversible data loss*** can result from clicking **Enable Territory Management from Scratch**.

4. Configure territory-related fields, page layouts, and user permissions:
   - Click **Setup ➤ Customize ➤ Accounts**:
     - Click **Fields** to set the field-level security of the `Territories` and `Exclude from territory assignment rules` fields.
     - Click **Page Layouts** to add those fields to account page layouts. Also, for each account page layout, you can set whether users can choose to run account assignment rules when they save accounts, and whether account assignment rules should run by default whenever accounts are saved.
   - Click **Setup ➤ Customize ➤ Opportunities**:
     - Click **Fields** to set the field-level security of the `Territory` field.
     - Click **Page Layouts** to add the field to opportunity page layouts.
   - Click **Setup ➤ Manage Users ➤ Profiles** to grant the "Manage Territories" permission to users who will be administrators of the territory hierarchy. Profiles that had the "Customize Application" permission before you enabled territory management are automatically given the "Manage Territories" permission.
5. To begin working with your new territory hierarchy, click **Setup ➤ Manage Territories ➤ Hierarchy**. See "Building Your Territory Hierarchy" in the Salesforce online help.

Managing Territories

User Permissions Needed	
To manage territories:	"Manage Territories" OR

User Permissions Needed	
	You are a forecast manager, `Forecast managers can manage territories` is selected, and you are working below your position in the territory hierarchy.

Managing your organization's territories involves the following tasks:

- Organize territories into hierarchies that represent your organization's forecasting requirements and how users work in your organization. See "Building Your Territory Hierarchy" in the Salesforce online help.
- Configure organization-wide settings for territory management. See "Configuring Territory Management Settings" in the Salesforce online help.
- Create new territories and edit existing territories. See "Creating Territories" in the Salesforce online help and "Displaying and Editing Territories" in the Salesforce online help.
- Assign users to territories. See "Managing Users in Territories" in the Salesforce online help.
- Define account assignment rules that evaluate accounts and assign them to territories. See "Managing Account Assignment Rules" in the Salesforce online help.
- Select accounts from lists and manually assign them to territories. See "Manually Assigning Accounts to Territories" in the Salesforce online help.

Building Your Territory Hierarchy

User Permissions Needed	
To view territories:	"View Setup and Configuration"
To edit territories:	"Manage Territories" OR You are a forecast manager, `Forecast managers can manage territories` is selected, and you are working below your position in the territory hierarchy.

Note: If you clicked the **Enable Territory Management** button to enable territory management, your existing forecast hierarchy was used as the basis of the territory hierarchy. For more information, see "Enabling Territory Management" in the Salesforce online help.

To work with your organization's territory hierarchy, click **Setup ➤ Manage Territories ➤ Hierarchy**. The following terms are used when referring to territories in the hierarchy:

Parent Territory
A territory that is located immediately above another territory in the hierarchy. A territory has exactly one parent territory in the hierarchy, except for the top-level territory which does not have a parent.

Child Territory
A territory that is immediately below another territory in the hierarchy. A parent territory can have an unlimited number of child territories.

Sibling Territory
Child territories that share the same parent territory.

Choose an option from the drop-down list to change how the territory hierarchy is displayed:

- **Show in tree view** - See a visual representation of the parent-child relationships between your territories. Click **Expand All** to see all territories, or click **Collapse All** to see only top-level territories. To expand an individual node, click the plus (+) icon. To collapse an individual node, click the minus (-) icon.
- **Show in sorted list view** - See a territory list that you can sort alphabetically by territory name, parent territory (**Reports to**), or description.
- **Show in list view** - See a list of territories and their children, grouped alphabetically by the name of the top-level territory. The columns are not sortable.

Each view provides links so you can create, edit, or delete territories. For more information, see:

- "Creating Territories" in the Salesforce online help
- "Displaying and Editing Territories" in the Salesforce online help
- "Deleting Territories" in the Salesforce online help

Configuring Territory Management Settings

User Permissions Needed	
To configure territory settings:	"Manage Territories"

You can set default account, opportunity, and case access levels for new territories, as well as whether forecast managers can administer the territories located below them in the territory hierarchy.

1. Go to **Setup ➤ Manage Territories ➤ Settings**.
2. Choose default access levels for accounts, opportunities, and cases. These are the access levels that will be selected by default when a new territory is created. See "Territory Fields" in the Salesforce online help for descriptions of these fields.

   Note: These settings are not retroactive and do not affect territories that already exist.

   When creating or editing an individual territory, you can override these default access levels. See "Creating Territories" in the Salesforce online help.

3. Optionally, check `Forecast managers can manage territories`. When this box is checked, forecast managers can administer subordinate territories: they can manage users, manually add accounts, and manage account assignment rules for territories that are below their immediate territory, . Also, they can add child territories to both their immediate territory and lower territories. To learn more about forecast managers, see "Assigning Forecast Managers in Your Forecast Hierarchy" in the Salesforce online help.

Creating Territories

User Permissions Needed	
To create territories:	"Manage Territories" OR You are a forecast manager, `Forecast managers can manage territories` is selected, and you are working below your position in the territory hierarchy.

You can create up to 500 territories for your organization. To create a new territory:

1. Click **Setup ➤ Manage Territories ➤ Hierarchy ➤ Add Territory**. You can also click **Add Territory** from the Child Territories related list of a territory detail page.
2. Define the new territory by entering or changing fields. See "Territory Fields" in the Salesforce online help for a description of each field.

   There are two required standard fields for territories: `Territory Name` and `Parent Territory`. Territories can also have custom fields. For more information, see "Creating Custom Territory Fields" in the Salesforce online help.
3. Click **Save** to finish or **Save & New** to create more territories.

Displaying and Editing Territories

User Permissions Needed	
To view territories:	"View Setup and Configuration"
To edit territories:	"Manage Territories" OR You are a forecast manager, `Forecast managers can manage territories` is selected, and you are working below your position in the territory hierarchy.

From the territory detail page, you can view and modify different aspects of the territory, including related territories, assigned users, and included accounts.

Displaying Territories

1. Click **Setup ➤ Manage Territories ➤ Hierarchy**.
2. Select the name of the territory you want to view.

Viewing Related Territories

The `Hierarchy` list at the top of the territory detail page shows how this territory is related to the top-level territory in the territory hierarchy. To see the names of other territories who share the same parent territory as this one, refer to the `Siblings` list immediately below. In either list, you can click a territory name to view that territory. The territory detail page also includes a Child Territories related list; see "Working with Territory Related Lists" in the Salesforce online help.

Editing Territories

To update an existing territory, click **Edit**, and then change the fields you want to modify. For more information, see "Territory Fields" in the Salesforce online help and "Creating Custom Territory Fields" in the Salesforce online help.

If an edit to a territory affects a very large amount of data, you will be sent a confirmation email when the operation has completed.

Cloning Territories

Click **Clone** to create a new territory with the same standard and custom field values as the current territory. The cloned territory will have the same parent territory as the original territory. However, assigned users, account assignment rules, and manually assigned accounts are not cloned.

Viewing Accounts Assigned to a Territory

Click **View Accounts** to see a list of the accounts that have been assigned to this territory and territories below it in the territory hierarchy. The list includes both manually assigned accounts and accounts that were assigned via rules.

Working with Territory Related Lists

Each territory detail page has the following related lists:

- **Assigned Users** - Lists the users in the territory. See "Managing Users in Territories" in the Salesforce online help.
- **Inherited Account Assignment Rules** - Lists the account assignment rules for this territory that are defined in a parent territory. See "Managing Account Assignment Rules" in the Salesforce online help.
- **Account Assignment Rules Defined in This Territory** - Lists the account assignment rules for this territory. See "Managing Account Assignment Rules" in the Salesforce online help.
- **Manually Assigned Accounts** - Lists the accounts that have been manually added to this territory. See "Manually Assigning Accounts to Territories" in the Salesforce online help.
- **Child Territories** - Lists the territories located immediately below this territory in the territory hierarchy. Click **Add Territory** to create a new child territory for this territory. Click a child territory name to view that territory's detail page.

Note: If enabled by your administrator, related list hover links display at the top of each detail page. Mouse-over a related list hover link to display the corresponding related list in an interactive overlay that allows you to quickly view and manage the related list items. You can also click a related list hover link to jump down to the content of the related list without having to scroll down the page.

Managing Users in Territories

User Permissions Needed	
To assign users to territories:	"Manage Territories" AND "Manage Users"

A territory can have an unlimited number of users, and a user can be assigned to an unlimited number of territories.

In the context of a specific territory, users have both an `Active` status and an `Active in Territory` status:

Active

An active user is able to log in to Salesforce.
Deactivated users, such as employees who are no longer with your company, are disabled from logging in to Salesforce. Deactivated users continue to own opportunities and appear in forecasts and territories. When users are deactivated, their opportunity forecast overrides, adjusted total overrides, and manager's choice overrides on subordinates' forecasts are frozen. However, the manager of a deactivated user can apply manager's choice overrides to that user's forecasts. Rollup amounts will be kept current. If a deactivated user is later reactivated, the user can resume normal work as before.
A user's active status is set by modifying his or her personal information at **Setup ➤ Manage Users ➤ Users**.

Active in Territory

Users with `Active in Territory` checked on the territory detail page have open opportunities, closed opportunities, or no opportunities at all in that territory. Users with `Active in Territory` deselected have been transferred out of or removed from the territory, but retain ownership of opportunities in the old territory.

To view the territories to which you belong, view the Territories related list on your personal information page accessible via **Setup ➤ My Personal Information ➤ Personal Information**. Administrators can view this related list for any user via **Setup ➤ Manage Users ➤ Users**.

Adding Users to Territories

To add users to a territory:

1. From a territory detail page, click **Add Users**.
2. Choose a view from the drop-down list, or click **Create New View** to build a new custom view. See "Creating Custom List Views" in the Salesforce online help.
3. Select and deselect checkboxes in the Action column to move users between the Available and Selected areas. Also, you can:
   - Click a letter to view users who correspond to that letter.
   - Click **All** to display all users who match the criteria of the current view.
   - Click **select shown** to move all users that are shown on the current list page to the Selected area below.
   - Click **deselect shown** or **deselect all** to move users from the Selected area to the Available area.

   Note: Users already assigned to the territory will not appear in the Available users list even if they meet the list view criteria.

4. When the Selected area includes all users that you want to assign to the territory, click **Assign**.

Removing Users from Territories

You can remove a user from a territory and choose who will receive his or her open opportunities:

1. In the Assigned Users related list on the territory detail page, click **Remove** next to the user's name.
2. Click the `New Owner` lookup icon ( ) to select a recipient for any open opportunities the user may have.
3. Alternatively, leave the `New Owner` field blank. One of the following results will occur:
   - If the parent territory has a forecast manager, then that forecast manager takes ownership of the user's open opportunities. Also, the forecast manager is assigned to the territory with `Active in Territory` unchecked.
   - If the parent territory does not have a forecast manager, then the user remains in the territory with `Active in Territory` unchecked.
4. Click **Save**.

   If very large amounts of data are affected, you will be sent a confirmation email when the operation has completed.

Transferring Users Between Territories

The user transfer wizard allows you to move a user from one territory to another, choose which open opportunities the user will continue to own, and designate a recipient for open opportunities the user leaves behind.

To transfer a user to another territory:

1. In the Assigned Users related list on the territory detail page, click **Transfer** next to the user's name.
2. Click **Select** next to the territory to which you are transferring the user. If necessary, expand or collapse nodes in the territory hierarchy to display the desired destination territory.
3. Click the `New Owner` lookup icon ( ) to select the user who will take ownership of the open opportunities that the transferred user does not keep. Click **Next** to proceed.

If you skip this step and choose not to select a recipient, the forecast manager of the parent territory of the user's former territory automatically receives the open opportunities that the user does not keep. If there is no forecast manager in the parent territory of the user's former territory, then the user being moved retains ownership of his or her opportunities.

4. Choose a list view of the user's open opportunities.
5. Click **Select** and **Deselect** to move opportunities between the Available and Selected areas. Also, you can:
   - Click a letter to view opportunities that correspond to that letter.
   - Click **All** to display all opportunities that match the criteria of the current view.
   - Click **select shown** to move all opportunities that are shown on the current list page to the Selected area below.
   - Click **deselect shown** or **deselect all** to move opportunities from the Selected area to the Available area.
6. When the Selected area shows the opportunities that you want the user to retain after the transfer, click **Transfer**.

   If very large amounts of data are affected, you will be sent a confirmation email when the operation has completed.

Note:

If you transfer the forecast manager out of a territory, that territory will no longer have a forecast and any opportunity overrides for that territory that were created by forecast managers above it in the territory hierarchy will be deleted. See "Overriding Customizable Forecasts" in the Salesforce online help.

Managing Account Assignment Rules

User Permissions Needed	
To manage account assignment rules:	"Manage Territories" OR You are a forecast manager, `Forecast managers can manage territories` is selected, and you are working below your position in the territory hierarchy.

About Account Assignment Rules

You can create account assignment rules that automatically move accounts into territories based on any standard or custom account field, such as zip code, state, industry, revenue, or number of employees. Each rule consists of multiple rows of criteria that specify exactly how the accounts are assigned.

Account assignment rules are governed by the following:

- A territory can have **inherited** account assignment rules, meaning that the rules were created somewhere higher in the territory hierarchy and consequently also impact the given territory.
- A territory can have **locally defined** account assignment rules, meaning that the rule was created at the given territory.
- If a territory does not have any inherited or locally-defined account assignment rules, then it will only contain accounts that were manually added. See "Manually Assigning Accounts to Territories" in the Salesforce online help.
- If an account matches both inherited and locally-defined account assignment rules for a territory, then the account will be assigned to the territory and also evaluated for its child territories.
- If an account matches a territory's inherited account assignment rules but not the territory's locally-defined rules, then the account will not be assigned to the territory, but will be evaluated for its child territories.

Working with Account Assignment Rules

Click **Run Rules** on the territory detail page to evaluate the active inherited and locally-defined rules shown on the page against all existing accounts in your organization. When you click **Run Rules**, an icon displays next to the button to indicate that rules are being processed. The icon also displays for all subordinate territories. An email confirmation is sent when processing is complete.

Note: To protect data quality, you are not allowed to modify a territory while the processing icon ( ) displays.

Click **Manage Rules** on the territory detail page to access the Manage Account Assignment Rules page, where you can create, edit, preview, and run account assignment rules:

- Click **New** to create a new rule, or **Edit** to edit an existing rule. See "Creating and Editing Account Assignment Rules" in the Salesforce online help.
- Use the `Active` checkbox to set a locally-defined rule as active or inactive.

  Active account assignment rules automatically evaluate accounts and assign them to territories when:

  - An account is created using the Salesforce user interface, the Apex API, or a client such as Offline Edition.
  - An account is imported using an import wizard.
  - An account is created by the conversion of a lead.
  - An account is edited and saved in the Salesforce user interface, provided the `Run territory management rules on save` checkbox on the account is visible and selected.
  - An account is edited and saved via the Apex API.
  - **Run Rules** is clicked on a territory detail page, provided the `Exclude from territory assignment rules` checkbox on the account is deselected.
  - **Save & Run Rules** is clicked on the manage account assignment rules page for a territory, provided the `Exclude from territory assignment rules` checkbox on the account is deselected.
  - Duplicate accounts are merged; see "Merging Duplicate Accounts" in the Salesforce online help.

- Click a rule name to see the details of that rule, including its active status and criteria. From a rule detail page you can edit, delete, or clone a rule.
- Click **Preview** to see the accounts that would be assigned to this territory and its child territories if the rules currently marked active were run. See "Previewing Account Assignments" in the Salesforce online help.
- Click **Save** to save the current active status of locally-defined rules.
- Click **Save & Run Rules** to save the current active status of locally-defined rules and evaluate the inherited and locally-defined rules shown on the page against all existing accounts in your organization.

Note: Running account assignment rules affects accounts in the Recycle Bin.

Manually Assigning Accounts to Territories

User Permissions Needed	
To manually add accounts to territories:	"Manage Territories" and "Edit" on accounts OR You are a forecast manager, `Forecast managers can manage territories` is selected, you are working below

User Permissions Needed	
	your position in the territory hierarchy, and you have "Edit" on accounts.

As an alternative to creating and running account assignment rules, you can add accounts to territories manually:

1. On the territory detail page, click **Add Accounts** on the Manually Assigned Accounts related list.
2. Choose a view from the drop-down list, or click **Create New View** to build a new custom view. See "Creating Custom List Views" in the Salesforce online help.
3. Click **Select** and **Deselect** to move accounts between the Available and Selected areas. Also, you can:
   - Click a letter to view accounts that correspond to that letter.
   - Click **All** to display all accounts that match the criteria of the current view.
   - Click **select shown** to move all accounts that are shown on the current list page to the Selected area below.
   - Click **deselect shown** or **deselect all** to move accounts from the Selected area to the Available area.
4. When the accounts in the Selected area includes all accounts that you want to manually add to the territory, click **Assign**.

Note: Manually adding accounts and running account assignment rules are completely independent. A manually added account remains in a territory until it is manually removed. There is nothing to prevent assignment rules also adding the account to the territory.

Territory Management FAQ

What kinds of records have territories?

Accounts, opportunities, and users have territory fields. Accounts and users can be associated with multiple territories. An opportunity can be associated with only one territory.

Are the territory hierarchy and the role hierarchy different?

Yes. The territory hierarchy and the role hierarchy are independent. See the following comparison:

Territory Hierarchy	Role Hierarchy
Is available by contacting salesforce.com	Is available by default
Determines forecasts	Has no impact on forecasting when territory management is enabled
Supports assigning a user to multiple territories	Supports assigning a user to only one role
Affects account and opportunity reports	Affects all other reports
Grants access to records regardless of ownership. Users receive whatever access is most permissive across both hierarchies.	Grants access to records based on ownership. Users receive whatever access is most permissive across both hierarchies.

How do manually assigned accounts differ from those assigned by account assignment rules?

Manually assigned accounts are not evaluated when account assignment rules are run. After they have been manually assigned to a territory, they remain there until they are manually removed from the territory. For more information, see "Manually Assigning Accounts to Territories" in the Salesforce online help.

When do account assignment rules evaluate accounts?

Active account assignment rules automatically evaluate accounts and assign them to territories when:

- An account is created using the Salesforce user interface, the Apex API, or a client such as Offline Edition.
- An account is imported using an import wizard.
- An account is created by the conversion of a lead.
- An account is edited and saved in the Salesforce user interface, provided the `Run territory management rules on save` checkbox on the account is visible and selected.
- An account is edited and saved via the Apex API.
- **Run Rules** is clicked on a territory detail page, provided the `Exclude from territory assignment rules` checkbox on the account is deselected.
- **Save & Run Rules** is clicked on the manage account assignment rules page for a territory, provided the `Exclude from territory assignment rules` checkbox on the account is deselected.
- Duplicate accounts are merged; see "Merging Duplicate Accounts" in the Salesforce online help.

How are opportunities assigned to territories?

Opportunities are automatically assigned to territories based on the following actions:

- **Creating a new opportunity**

  Opportunities that you create are automatically assigned a territory when you meet both of the following conditions:

  - You belong to or have edit privileges on the same territory as the account on the opportunity.
  - You have no other territories in common with that account.

  For example, if you are in the territories Berkeley and San Francisco and the account is in the territories Portland, San Francisco, and Seattle, the opportunity will be assigned to the San Francisco territory.

- **Running account assignment rules**

  When account assignment rules are run, opportunities are automatically assigned to the same territory as the account when:

  - An opportunity does not have a territory and its account is added to a territory.
  - An account moves from one territory to another. However, if an account assignment rule prohibits opportunities from moving outside a given part of the territory hierarchy, the opportunities do not move and no longer belong to any territories.

  Opportunities are not automatically assigned to the same territory as the account when:

  - An account is removed from a territory and not reassigned to a new territory in the same operation. The account's opportunities from the original territory no longer belong to any territories.
  - An account is reassigned to multiple territories in one operation. The account's opportunities from the original territory no longer belong to any territories, unless the `Confine Opportunity Assignment` checkbox is checked. For more information, see "How does opportunity confinement work?" in the Salesforce online help.

Note: If the opportunity owner is not part of the new territory, he or she is added as an inactive member of the territory.

The following actions do not change an opportunity's territory:

- Manually assigning the opportunity's account to a territory
- Changing which account is associated with the opportunity
- Changing the account's territory as a result of account assignment rules if the opportunity and its account are in different territories
- Transferring the opportunity to a new owner. For additional consequences of this, see "Must I be assigned to the same territories as the opportunities I own?" in the Salesforce online help.

Must I be assigned to the same territories as the opportunities I own?

When an open opportunity is assigned to you and you do not belong to that opportunity's territory, you are assigned to the territory with `Active in Territory` unchecked in the Assigned Users related list of the territory. For more information, see "Managing Users in Territories" in the Salesforce online help.

Are opportunities transferred to different users when account assignment rules are run?

When account assignment rules cause an opportunity to be reassigned to a territory to which you already belong, you automatically become the owner of that opportunity when you meet any of the following criteria:

- You are the only member of the territory.
- You are the only forecast manager in the territory.
- You are the only territory member enabled for forecasting.

If none of these criteria are met, the original opportunity owner is added to the territory as an inactive member.

How does opportunity confinement work?

If the `Confine Opportunity Assignment` checkbox is selected for a territory, the territory's opportunities remain in the territory or its child territories when you run account assignment rules. The following exceptions apply:

- If an opportunity's account moves to only one of the territory's children, then the opportunity follows the account and is reassigned to the account's new territory. This includes when an account moves to multiple territories and only one of the new territories is a child of the original territory.
- If an opportunity's account moves to more than one of the territory's children, then the opportunity's territory field is set to blank.
- If an opportunity's account moves completely out of the territory and its children, then the opportunity's territory field is set to blank.

What happens when I undelete an account or opportunity that was assigned to a territory?

Undeleting an account or opportunity restores the territory assignment, but does not trigger the evaluation of account assignment rules. If account assignment rules changed while the record was in the Recycle Bin, the restored record may have territories that are not consistent with the new rules.

Analytic Mash-Ups

Winter '07 delivers exciting new capabilities for your Salesforce reports and dashboards. Now you can integrate third-party systems into dashboards, allow users to move from one dashboard to a location other than the dashboard's source report, and grant users read-only access to reports.

About Analytic Mash-Ups

You can now insert any application component within a Salesforce dashboard to deliver specific data visualizations in a single view. With Winter '07, anything that can be displayed in a custom s-control—HTML, Flash, Java, and content from other websites—can be displayed as a visually stunning dashboard component on the Dashboards tab. Potential uses for analytic mash-ups include integrating the following into Salesforce dashboards:

- Web analytics from Omniture and WebTrends
- Profitability analysis from Business Objects
- Supply chain analysis from Crystal Reports
- Complex visualizations of Salesforce data using Crystal Xcelsius

Implementation Tips

- You cannot create analytic mash-ups that access other dashboard components. However, analytic mash-ups using Flash can share data via Flash variables.
- Always add <NOSCRIPT> to custom s-controls where JavaScript is used to generate content for dashboards. This allows users to view dashboards from clients that do not support JavaScript.

Best Practices

- Build custom s-controls so that users can add them to dashboard components.
- Make sure users tasked with building custom s-controls on dashboards have the "Customize Application" permission to create s-controls and the "Manage Dashboards" permission to add s-controls to dashboard components.
- Preview mash-ups on dashboard components before they are added to the Dashboards tab to make sure they are useful to users.

Creating Analytic Mash-Ups

To create an analytic mash-up:

1. Create or edit a custom s-control that would be suitable as a dashboard component. For more information on creating or editing custom s-controls, see "Defining Custom S-Controls." in the Salesforce online help
2. Create or edit a dashboard. To edit a dashboard, view the dashboard and click **Edit**. To create a dashboard, see "Creating and Editing Dashboard Properties" in the Salesforce online help.
3. Click the **Add Component** link at the top of any column to add a component to that column.
4. Choose Custom S-Control as the `Component Type`.
5. Select the predefined custom s-control and set its display height.
6. Click **Save**.

Drill Through to URLs

You can now embed any URL in a dashboard. This allows dashboard creators to select whether users drill down to the dashboard component's source report or to another dashboard, report, record detail page, or another system that uses a Web interface. This can be particularly useful for presenting a high-level overview on a dashboard, and then linking to more detailed information stored elsewhere.

Implementation Tips

- Adding URLs to other systems works well if your organization includes Single Sign-On (SSO) integration. For more information on SSO integration, see the Salesforce online help.
- Embedding a URL on a dashboard component only works for chart type dashboard components.

Best Practices

- Validate URLs before adding them to dashboards.
- Do not use merge fields in a drill through URL because merge fields are not supported with this feature.

Adding a Drill Through URL

To add a drill through URL to a dashboard component:

1. Create or edit a dashboard. To edit a dashboard, view the dashboard and click **Edit**. To create a dashboard, see "Creating and Editing Dashboard Properties" in the Salesforce online help.
2. Click the **Add Component** link at the top of any column to add a component to that column.
3. If you have chosen a chart type for the component, select Other URL from the `Drill Down to:` drop-down list and enter the URL in the `Drill Down URL` field.
4. Click **Save**.

Read-Only Reports User

With Winter '07 you can modify custom profiles to allow users to see reports that are only set up for them by administrators. This allows administrators to restrict specific users from customizing reports or reporting on certain types of data. Report designers can use filter criteria to choose the data read-only reports users see, and they can specify whether dates automatically adjust so that reports are always current and maintenance free.

Implementation Tips

- Deselect the “Create and Customize Reports” permission on the profile of users who should only have read-only access to reports.
- Create a new report folder in which to save reports for users who can only read reports. The reports in this folder should have the most common role hierarchy drill down criteria set.
- Prepare to create a variety of reports to cover unforeseen reporting needs for read-only report users.

Best Practices

- Clone the existing profiles of users who should only have read-only access to reports, and then deselect the "Create and Customize Reports" permission from the new profiles.
- Assign profiles with the deselected "Create and Customize Reports" permission to users who have no business need to create reports.

Modifying Profiles for Read-Only Report Users

To modify a custom profile so that its users have read-only access to reports:

1. Click **Setup ➤ Manage Users ➤ Profiles** and select the name of the profile.
2. Click **Edit**.
3. Deselect the "Create and Customize Reports" permission.
4. Verify that the "Run Reports" permission is selected.
5. Click **Save**.

Desktop Solution Administration

Are you running the most recent version of your favorite Salesforce client? In Winter '07, Salesforce answers that question for you—when you log in, an alert displays on the Home tab when an update is available. In addition, a new page in the Personal Setup area lists available clients and their version numbers.

Furthermore, administrators can now set access policies per profile to control which clients are available and how they can be upgraded.

Implementation Tips

The ability to customize client access settings per profile is available in Enterprise and Unlimited Editions for Office Edition, Offline Edition, Outlook Edition, and Lotus Notes Edition. It is also available in Developer Edition for Offline Edition only. For each profile, the default client access setting is "On, updates w/o alerts." Edit your organization's profiles to customize their client access settings.

Best Practices

For best results, use Microsoft Internet Explorer with ActiveX controls enabled. To see your ActiveX settings, open Internet Explorer and go to **Tools ➤ Internet Options... ➤ Security ➤ Custom Level... ➤ ActiveX controls and plug-ins**.

About Desktop Solution Administration

Viewing Client Update Alerts

User Permissions Needed	
To view client update alerts:	"On, updates w/alerts" OR "On, must update w/alerts" on your profile

Under the following conditions, an alert banner automatically appears across the Home tab when new versions of clients such as Outlook Edition and Offline Edition are available:

- Your administrator has given you access to see the Home tab alerts. See "Setting User Permissions for Desktop Clients" in the Salesforce online help.
- In the past, you have successfully logged in from the client with your Salesforce username and password.

Click the alert banner to proceed to the Check for Updates page. Note that you can navigate to the Check for Updates page at any time to see which client versions are installed on your computer.

Note: Offline Edition is the only client available with Developer Edition.

Checking for Desktop Client Updates

Desktop clients such as Outlook Edition and Offline Edition integrate Salesforce with your PC. Follow these steps to see which desktop client versions are installed on your computer and download available updates:

Note: We recommend that you use the Internet Explorer web browser with ActiveX controls enabled. If prompted, accept the ActiveX control published by salesforce.com. This allows a registry scan that determines which client versions are installed. With other browsers, update recommendations are based on a user's login history—which is less precise.

1. Navigate to **Setup ➤ Desktop Integration ➤ Check for Updates**.
2. From the table, review the names and version numbers of available desktop clients.
3. If you are using Internet Explorer with ActiveX controls enabled, click **Install Now** to install a client.
4. If you are using another browser such as Mozilla Firefox, click **Download Now** to save the installer file to your computer. Then double-click the saved file to run the installer program.

Your administrator controls which desktop clients you are allowed to install. See "Setting User Permissions for Desktop Clients" in the Salesforce online help. Note that Offline Edition is the only client available with Developer Edition.

Setting User Permissions for Desktop Clients

User Permissions Needed	
To set user permissions for desktop clients:	"Manage Users"

Outlook Edition, Offline Edition, Office Edition, and Lotus Notes Edition are desktop clients that integrate Salesforce with your PC. As an administrator, you can control which desktop clients your users can access as well as whether users are automatically notified when updates are available.

In Enterprise, Unlimited, and Developer Editions, use the following procedure to set your users' desktop client permissions. Note that Offline Edition is the only client available with Developer Edition. In Personal, Team, and Professional Editions, all users have the system default "On, updates w/o alerts" for all clients.

1. In Salesforce, navigate to **Setup ➤ Manage Users ➤ Profiles**.
2. Click **Edit** next to a profile name.
3. Go to the Desktop Integration Clients section at the bottom of the page.
4. For each desktop client, choose one of the following options:

Option	Meaning
Off (access denied)	The respective client download page at **Setup ➤ Desktop Integration** is hidden. Also, users cannot log in from the client.
On, no updates	The respective client download page at **Setup ➤ Desktop Integration** is hidden. Users can log in from the client but are not allowed to upgrade it from their current version.
On, updates w/o alerts	Users can download, log in from, and upgrade the client, but do not see alerts when a new version is made available.
On, updates w/alerts	Users can download, log in from, and upgrade the client. They will see update alerts, which they can choose to follow or ignore.

Option	Meaning
On, must update w/alerts	Users can download, log in from, and upgrade the client. When a new version is available, they will see an update alert. They will not be able to log in from the client until they have upgraded it.

Note: If users in your organization have an Outlook Edition version earlier than 2.0 (such as version 115), and their profile setting is "Off (access denied)" or "On, must update w/alerts," the error `Invalid Salesforce API request` may occur when they attempt to log in to Outlook Edition. Users with Outlook Edition 2.0 or later will see an appropriate descriptive message.

5. Click **Save**.

If a user is allowed to see alerts, under the condition that he or she has logged in to Salesforce from the client in the past, an alert banner will automatically appear across the Home tab when a new version is available. Clicking the banner opens the Check for Updates page, where users can download and run installer files. Note that the Check for Updates page is always available from the Desktop Integration menu in setup, regardless of whether an alert has occurred.

Note: We recommend that you use the Internet Explorer web browser with ActiveX controls enabled. If prompted, accept the ActiveX control published by salesforce.com. This allows a registry scan that determines which client versions are installed. With other browsers, update recommendations are based on a user's login history—which is less precise.

Lotus Notes Edition

Lotus Notes Edition is a powerful new desktop client that integrates Salesforce with Lotus Notes, allowing you to easily create and update Salesforce records from your familiar Lotus Notes interface.

Implementation Tips

- For information on how IT departments can centrally roll out Lotus Notes Edition to an existing user base, see Deploying Lotus Notes Edition System-Wide on page 49 below.
- To view solutions for common installation issues, search for the keyword "lotus" in the Help & Training window.

Best Practices

- Consider disabling context-sensitive menu commands to improve system performance. This reduces the number of round-trips to the server. See Setting Lotus Notes Edition Options on page 57 below.
- Control how users can access and upgrade Lotus Notes Edition by customizing their profiles. See "Setting User Permissions for Desktop Clients" in the Salesforce online help below.

About Lotus Notes Edition

What is Lotus Notes Edition?

Lotus Notes Edition is a plug-in for IBM® Lotus Notes® that allows you to conveniently interact with Salesforce from your Lotus Notes user interface. Lotus Notes Edition adds new commands to the **Actions** and right-click menus in your Lotus Notes user interface.

Lotus Notes Edition offers the following features:

- Synchronize your Lotus Notes contacts, events, and tasks with Salesforce (see "Synchronizing Your Contacts and Activities with Lotus Notes Edition" in the Salesforce online help).
- Upload Lotus Notes emails and their attachments to Salesforce (see "Adding a New Lotus Notes Outbound Email to Salesforce" in the Salesforce online help and "Adding a Lotus Notes Sent or Received Email to Salesforce" in the Salesforce online help).
- Associate Lotus Notes emails with accounts, assets, campaigns, cases, contacts, contracts, leads, and opportunities (see "Associating Lotus Notes Emails with Salesforce Records" in the Salesforce online help).
- Associate events and tasks in Lotus Notes with accounts, assets, campaigns, cases, contacts, contracts, leads, opportunities, and custom objects your administrator has set as "deployed" (see "Associating Lotus Notes Events and Tasks with Salesforce Records" in the Salesforce online help).
- Associate contacts in Lotus Notes with related accounts and contacts (see "Associating Lotus Notes Contacts with Salesforce Records" in the Salesforce online help).
- Create a case directly from a Lotus Notes email (see "Creating Cases from Lotus Notes Emails" in the Salesforce online help).
- Quickly create a new Salesforce account, contact, or lead from Lotus Notes (see "Quickly Creating Salesforce Records from Lotus Notes" in the Salesforce online help).
- From Lotus Notes, open Salesforce records in a browser (see "Opening Salesforce Records from Lotus Notes" in the Salesforce online help).

Note: If your administrator has renamed any Salesforce standard tab names, the tab names you see in Lotus Notes Edition will be different from those mentioned in these help topics.

Person accounts are not supported in Lotus Notes Edition. For more information, see "What is a Person Account?" in the Salesforce online help.

Installing Lotus Notes Edition

To download and install Lotus Notes Edition:

1. Back up your Lotus Notes databases. Contact your IT department for its preferred backup procedures.
2. Back up your Salesforce data. We recommend you run reports of your contacts and activities and then export them to Excel. Alternatively, you can ask your Salesforce administrator to back up your organization's data using weekly export; see "Exporting Backup Data" in the Salesforce online help.
3. Within Salesforce, click **Setup ➤ Desktop Integration ➤ Lotus Notes Edition**.

   In Enterprise and Unlimited Editions, your administrator may have prohibited access to the download page. For more information, see "Setting User Permissions for Desktop Clients" in the Salesforce online help.

   Also, if "person accounts" in the Salesforce online help have been enabled for your organization, Lotus Notes Edition will not be available.
4. Click **Install Now**.
5. Click **Yes** when prompted to install Lotus Notes Edition.
6. Follow the prompts in the setup wizard to complete the installation.
7. Start Lotus Notes. A welcome wizard will introduce you to features and options. To change your Lotus Notes Edition options later, see "Setting Lotus Notes Edition Options" in the Salesforce online help.

Note: Lotus Notes Edition requires Salesforce to install components that edit the registry on your computer. If your organization imposes security that prevents you from editing the registry, log in as the administrator of your machine before installing these components or contact your IT department for assistance.

The Lotus Notes Edition download page also includes a link to download an **MSI** file so administrators can centrally deploy Lotus Notes Edition to their organizations. See "Deploying Lotus Notes Edition System-Wide" in the Salesforce online help for more information.

Lotus Notes Edition System Requirements

The system requirements for Lotus Notes Edition are:

- Microsoft Windows 2000 or Windows XP Professional
- IBM Lotus Notes 6.0 or 6.5

Caution: If your organization uses a custom Lotus Notes design template (.ntf) with modified fields, Lotus Notes Edition may not function as expected.

Lotus Notes Edition relies on the presence of certain fields in the default Lotus Notes mail template. For example, the **Send and Add** command will not work if the following fields are not available:

- EnterSendTo
- EnterCopyTo
- EnterBlindCopyTo

Note: Lotus Notes Edition is available in all languages supported by Salesforce. However, your Lotus Notes Edition language is determined by your Windows language setting rather than your Salesforce language.

Deploying Lotus Notes Edition System-Wide

As an administrator, you can centrally deploy Lotus Notes Edition to your users:

1. Back up your users' Lotus Notes databases.
2. Make sure you have a recent backup of your organization's Salesforce data. If your organization does not already receive weekly export files, contact salesforce.com to request them.
3. On your computer, exit Lotus Notes.
4. In Salesforce, go to the Lotus Notes Edition download page at **Setup ➤ Desktop Integration ➤ Lotus Notes Edition**.
5. Save the MSI file to your computer. You will use this file when you roll out Lotus Notes Edition to your users.

   The following publicly available resources may be helpful if you need more information about deploying MSI files:

   - The Wikipedia encyclopedia entry for Windows Installer.
   - The Definitive Guide to Windows Installer Technology for System Administrators, by Darwin Sanoy and Jeremy Moskowitz. Published by Realtimepublishers.

   Please note that the availability and accuracy of these resources cannot be guaranteed by salesforce.com.
6. Install Lotus Notes Edition on your computer.
7. See "Modifying Registry Entries" in the Salesforce online help and "Restricting Data Movement" in the Salesforce online help to learn how to control what users can and cannot do with Lotus Notes Edition.

Modifying Registry Entries

To customize the default behavior of Lotus Notes Edition for your users, follow this procedure:

1. Open your Lotus Notes Edition dictionary file at `C:\Program Files\Lotus\Notes\L_Dictionary.xml` (or wherever Lotus Notes program files exist on your computer). Note that this dictionary file takes precedence over the file with the same name at `C:\Documents and Settings\<user name>\ Application Data\salesforce.com\SM`.
2. If necessary, change the `OverrideOptions` attribute to "true".
3. Using this tip sheet for reference, add entries to the `<OverrideOptions>` section. For example, to hide the salesforce.com splash page which ordinarily displays when Lotus Notes starts, add the line `<PutRegistry name="DisplaySplash" type="string" value="false" />`.

The valid options for `type` are "string" and "dword". A string can have a maximum of 256 characters. A dword can be an integer no greater than 0x7FFF.

4. Save your modified dictionary file.
5. Optionally, follow the steps in "Restricting Data Movement" in the Salesforce online help to make additional dictionary file changes.
6. Using a tool such as Microsoft Systems Management Server (SMS), distribute the XML file to your users in the following directory: `C:\Program Files\Lotus\Notes` (or wherever Lotus Notes program files exist on their computers).
7. For your users, Lotus Notes Edition will operate according to the options you specified.

Restricting Data Movement

Lotus Notes Edition allows users to synchronize their contacts, events, and tasks between Salesforce and Lotus Notes. As an administrator, you can enforce data quality by controlling how data can move during synchronizations. Follow these steps:

1. Start a Lotus Notes client where Lotus Notes Edition has been installed.
2. In Lotus Notes, go to **Actions ➤ Salesforce Options**.
3. In the Contacts, Events, and Tasks tabs, set the following fields as desired:
   - `Synchronize Data with Salesforce` - Select this checkbox to allow users to synchronize that type of record. If you deselect it, all Lotus Notes Edition features related to synchronization will be hidden from your users.
   - `Data Movement` - Can be `Synchronize with Salesforce`, `Import from Salesforce`, `Export to Salesforce`, `Import with Overwrites`, or `Export with Overwrites`. For descriptions of these options, see "Contacts, Events, and Tasks Options for Synchronization" in the Salesforce online help.
   - Click **Advanced ➤ Conflict** and choose one of the following radio buttons: `Ignore all conflicts`, `Notify me when conflicts occur`, `Salesforce always wins`, or `Lotus Notes always wins`. For descriptions of these options, see "Advanced Contacts, Events, and Tasks Options for Synchronization" in the Salesforce online help.
4. Click the User Permissions tab. For reference, the Synchronization Settings area summarizes the settings you made in the previous step.
5. In the User Permissions area, select or deselect the following checkboxes:
   - `User can modify which objects are synchronized`
   - `User can modify field mappings` - For more information, see "Mapping Custom Fields for Lotus Notes Edition Synchronization" in the Salesforce online help.
   - `User can modify conflict resolution options` - For more information, see "Resolving Data Conflicts During Lotus Notes Edition Synchronization" in the Salesforce online help.
   - `User can modify the direction of synchronizations`
   - `User can use quick create` - For more information, see "Quickly Creating Salesforce Records from Lotus Notes" in the Salesforce online help.
6. As needed, enter custom view names in the `Custom view names` box. For example, you can specify a view for a particular language, or specify a nonstandard folder or view where you would like Lotus Notes Edition commands to be enabled. Use semicolons to separate multiple names.
7. As needed, enter custom class names in the `Custom template classes` box. Use semicolons to separate multiple values.

   In Lotus Notes, template class names are displayed in the dialog at **File ➤ Database ➤ Properties** - see the Inheritance section on the fourth tab from the left.
8. Optionally, click **Restore** to revert the settings to their default values.
9. Click the **Show File** button to open the settings file `L_Dictionary.xml`. If necessary, change the `OverrideOptions` attribute to "true". Save and close the file.
10. If you have not already prohibited user access to program files, do so now. At a minimum, deny write access to `C:\Program Files\salesforce.com`.

11. Using a tool such as Microsoft Systems Management Server (SMS), distribute the XML file to your users in the following directory: `C:\Program Files\Lotus\Notes` (or wherever Lotus Notes program files exist on their computers).
12. When they start Lotus Notes Edition, users will only be able to perform the operations that you have enabled and will not have access to the User Permissions tab.

Tip: For best results, we recommend the following settings:

Type of Record	Recommended Setting
Contacts	Import from Salesforce
Events	Synchronize with Salesforce
Tasks	Synchronize with Salesforce

Synchronizing Your Contacts and Activities with Lotus Notes Edition

With Lotus Notes Edition, you can synchronize your contacts, events, and tasks between Salesforce and Lotus Notes.

Note: If you want to synchronize contacts owned by other users, set your sync profile before synchronizing; see "Setting Your Sync Profile" in the Salesforce online help.

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

You currently cannot synchronize activity reminders between Salesforce and Lotus Notes.

1. In Lotus Notes, select one or more contacts or tasks that you want to synchronize with Salesforce. Make sure that a check mark appears next to each selected item. For events, open the calendar entry.
2. Right-click and choose **Mark for Sync** to specify that the item will by synchronized. Alternatively, choose **Mark for Sync** from the **Actions** menu.
3. Right-click and choose **Sync** to start a synchronization operation. Alternatively, choose **Sync** from the **Actions** menu.

   Your first synchronization may take several minutes, because your data is comparison-checked in order to prevent duplicates.
4. If records will be added to Lotus Notes or Salesforce as a result of the synchronization, you will see a dialog box that summarizes these changes and asks you to confirm them. If you decide not to accept them, click **Cancel**.
5. If necessary, you will be prompted to resolve any data conflicts. See "Resolving Data Conflicts During Lotus Notes Edition Synchronization" in the Salesforce online help.
6. When the synchronization process completes, click **OK**.

To specify that you no longer want to synchronize an item, select one or more items and click **Unmark for Sync** in the right-click or **Actions** menus.

Tip: Lotus Notes Edition contains various synchronization options you can customize, including scheduling synchronization, specifying the synchronization direction, determining how conflicts should be handled by default, and specifying the field mappings for synchronization. See "Setting Lotus Notes Edition Options" in the Salesforce online help.

Resolving Data Conflicts During Lotus Notes Edition Synchronization

During synchronization, the conflict resolution tool allows you to choose which information to save if a record has been modified at more than one location. For example, if you changed a contact's phone number in Lotus Notes and then changed that contact's address in Salesforce, you will need to identify which values are the most recent and correct.

1. View which records and fields have data conflicts.

   In the conflict resolution window, the left side of the window displays a list of the records that have data conflicts. The right side of the window displays the fields that have conflicting data for the record selected in the left side. Use the drop-down list in the left pane to choose how you want records displayed, in a tree or list view. Use the drop-down list in the right pane to switch between a list of all fields or only those that have conflicting data.
2. Choose the record in the left pane that you want to resolve.
3. To specify the information that should be saved, either select the appropriate radio button, `Your Values` or `Salesforce Values`, or click the pencil icon and type directly into the `Your Values` column.

   Note: Checkbox fields show a check mark or are blank for unchecked.

   Some values are read only in the conflict resolution window. For read-only values, you can only select which value to save; you cannot directly edit the field.
4. Repeat these steps for each record listed in the left pane. When you have selected a value to resolve the conflict, the status of the record in the left pane displays a green check.
5. Click **Submit** when you have finished making selections for all records in conflict.

Finding Contacts and Leads in the Lotus Notes Edition Salesforce Address Book

With Lotus Notes Edition, you can use the Salesforce Address Book to find contacts and leads and add them as recipients of outbound emails.

1. In Lotus Notes, click the mail icon to open your email database.
2. Click **New Memo**.
3. Choose **Salesforce Address Book** from either the right-click or **Actions** menus.
4. In the search box, enter all or part of the `Email`, `First Name`, `Last Name`, `Phone`, lead `Company`, custom email or phone number field, or any other field accessible in sidebar search for contacts and leads. For a complete list, see "Search Fields" in the Salesforce online help.

   For example, enter *mi* or *mike* or *meyers* or *mike meyers* to find *Mike Meyers*.
5. Click **Search** to find the matching contacts and leads.
6. Select names from the search results.
7. Click the **To**, **Cc**, or **Bcc** button to add the names as recipients of the email.
8. Click **OK** to finish.

Adding a New Lotus Notes Outbound Email to Salesforce

Lotus Notes Edition enables you to send emails from IBM® Lotus Notes® and quickly log them as tasks in Salesforce.

1. In Lotus Notes, click the mail icon to open your email database.
2. Click **New Memo**.
3. If desired, use the Salesforce Address Book to add contacts and leads as recipients of the email. See "Finding Contacts and Leads in the Lotus Notes Edition Salesforce Address Book" in the Salesforce online help.
4. Compose your email.

5. Choose **Send and Add** from either the right-click or **Actions** menus. Alternatively, choose **Send File and Add** to also file the sent email in a Lotus Notes folder of your choice.

   The Add to Salesforce dialog window opens.
6. Associate the email with accounts, assets, campaigns, cases, contacts, contracts, leads, and opportunities. See "Associating Lotus Notes Emails with Salesforce Records" in the Salesforce online help.
7. To create a new account, contact, or lead from the Add to Salesforce dialog, see "Quickly Creating Salesforce Records from Lotus Notes" in the Salesforce online help.
8. In the Attachments tab, add email attachments or other files on your computer as attachments on the contact, lead, or other record you chose earlier.
9. In the Message tab, edit the body of the email as desired. This only affects the task in Salesforce, not the stored email in Lotus Notes.
10. Click the **Add to Salesforce** button in the dialog.
11. If you chose **Send File and Add**, select the Lotus Notes folder where you want to save the sent email.
12. The email is added as a task in the Activity History related list of the associated records. Lotus Notes Edition automatically sets the `Type` value of the task to Email.

    In the confirmation dialog, click **OK** to return to your email database.

    If enabled, the new task will automatically open in a browser window. Note that the window may open behind the other windows on your desktop.

Note: If you have multiple IMAP or POP3 email accounts and you select your non-default email account for sending and adding new emails to Salesforce, Lotus Notes Edition does not use the non-default account you have selected. It always uses your default IMAP or POP3 email account when you click the **Add to Salesforce** button.

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Adding a Lotus Notes Sent or Received Email to Salesforce

You can use Lotus Notes Edition to upload emails that you have sent or received in Lotus Notes as tasks in Salesforce.

1. In your Lotus Notes mail view, select an email by adding a check mark next to it. Alternatively, open the email.
2. Choose **Add Email** from either the right-click or **Actions** menus.

   The Add to Salesforce dialog window opens.
3. Associate the email with accounts, assets, campaigns, cases, contacts, contracts, leads, and opportunities. See "Associating Lotus Notes Emails with Salesforce Records" in the Salesforce online help.
4. To create a new account, contact, or lead from the Add to Salesforce dialog, see "Quickly Creating Salesforce Records from Lotus Notes" in the Salesforce online help.
5. In the Attachments tab, add email attachments or other files on your computer as attachments on the contact, lead, or other record you chose earlier.
6. In the Message tab, edit the body of the email as desired. This only affects the task in Salesforce, not the stored email in Lotus Notes.
7. Click the **Add to Salesforce** button in the dialog.
8. The email is added as a task in the Activity History related list of the associated records. Lotus Notes Edition automatically sets the `Type` value of the task to Email.

   In the confirmation dialog, click **OK** to return to your email database.

   If enabled, the new task will automatically open in a browser window. Note that the window may open behind the other windows on your desktop.

Note:

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Associating Lotus Notes Emails with Salesforce Records

User Permissions Needed	
To associate Lotus Notes items with Salesforce records:	"Read" on each type of record

You can associate Lotus Notes emails with accounts, assets, campaigns, cases, contacts, contracts, leads, and opportunities.

1. Compose a new outbound email or select a sent or received email, and then open the Add to Salesforce dialog window.
2. In the Names tab of the dialog:
   a. Click the lookup icon to select an assignee for the new task.
   b. Choose a status for the task.
   c. Optionally, edit the task subject, which is automatically populated with the subject from the email.
   d. Lotus Notes Edition automatically matches the recipient and sender fields of the email with the `Email` field of existing contacts and leads. If no matches are found or if you want to choose a different record, enter a search term and click **Go!**. See the tip below for help on performing searches.
   e. Select your chosen contact or lead to highlight it.
3. If you are associating the email with a contact, continue to the Related To tab:
   a. Choose an object from the Search Options box.
   b. Enter a search term and click **Go!**. See the tip below for help on performing searches.
   c. Select your chosen record to highlight it. This record does not need to have a relationship to the contact you chose on the Names tab.
4. Continue adding the email to Salesforce. See "Adding a New Lotus Notes Outbound Email to Salesforce" in the Salesforce online help and "Adding a Lotus Notes Sent or Received Email to Salesforce" in the Salesforce online help.

Tip: When searching for Salesforce records in the Names and Related To tabs, be aware of the following:

- You can perform searches for any field supported in Salesforce sidebar search. See "Search Fields" in the Salesforce online help for a complete list.
- You can use Boolean operators such as AND and OR in your search terms.
- Within the search results, click the **View** link to open that record.

Note:

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Associating Lotus Notes Events and Tasks with Salesforce Records

User Permissions Needed	
To associate Lotus Notes items with Salesforce records:	"Read" on each type of record

In Lotus Notes, you can associate events on your calendar and tasks on your to-do list with accounts, assets, campaigns, cases, contacts, contracts, leads, opportunities, and custom objects your administrator has set as "deployed". Note that for events and tasks, you can only associate the custom objects for which your administrator has checked `Allow Activities`.

1. In Lotus Notes, open the individual event or task. Alternatively, select the item so there is a check mark next to it.
2. Choose **Associate** from either the right-click or **Actions** menus.

   A dialog window opens.
3. In the first line of the Associations box:
   a. Choose Contacts or Leads from the drop-down list.
   b. Click the lookup icon to search for and select the desired person.
4. If you chose Contacts in the first line, then you can proceed to the second line in the Associations box:
   a. Choose an object from the drop-down list.
   b. Click the lookup icon to search for and select the desired record.
5. Optionally, click **View** to open a selected record in a new browser window.
6. Click **OK** to save your work.

Note:

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Associating Lotus Notes Contacts with Salesforce Records

User Permissions Needed	
To associate Lotus Notes items with Salesforce records:	"Read" on each type of record

In Lotus Notes, you can specify an account to which a contact is related as well as the name of the contact's reporting manager.

1. In Lotus Notes, open a contact. Alternatively, select the contact so there is a check mark next to it.
2. Choose **Associate** from either the right-click or **Actions** menus.

   A dialog window opens.
3. In the `Contacts` line, click the lookup icon to search for and select the contact's manager. Lotus Notes Edition will add the manager's name to the `Reports To` field on the contact.
4. In the `Accounts` line, click the lookup icon to search for and select a related account.
5. Optionally, click **View** to open a selected record in a new browser window.
6. Click **OK** to save your work.

Note:

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Creating Cases from Lotus Notes Emails

For emails that you have sent or received in Lotus Notes, you can create a case in Salesforce using the contents of the email.

1. In your Lotus Notes mail view, select an email by adding a check mark next to it. Alternatively, open the email.
2. Choose **Add Case** from either the right-click or **Actions** menus.

   The Add to Salesforce dialog window opens.
3. In the Names tab of the dialog:

   a. Click the lookup icon to select an owner for the new case.
   b. Choose a status for the case.
   c. Optionally, edit the case subject, which is automatically populated with the subject from the email.
   d. Lotus Notes Edition automatically matches the recipient and sender fields of the email with the `Email` field of existing contacts. If no matches are found or to choose a different contact, enter a search term and click **Go!**.

      Note the following:

      - You can perform searches for any field supported in Salesforce sidebar search. See "Search Fields" in the Salesforce online help for a complete list.
      - You can use Boolean operators such as AND and OR in your search terms.
      - Within the search results, click the **View** link to open that record.

   e. Select your chosen contact to highlight it.
4. To create a new contact from the Add to Salesforce dialog, see "Quickly Creating Salesforce Records from Lotus Notes" in the Salesforce online help.
5. In the Attachments tab, add email attachments or other files on your computer as attachments on the new case.
6. In the Message tab, edit the body of the email as desired. This only affects the case description in Salesforce, not the stored email in Lotus Notes.
7. Click the **Add to Salesforce** button in the dialog.
8. If enabled, the new case will automatically open in a browser window. Note that the window may open behind the other windows on your desktop.

Note:

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Quickly Creating Salesforce Records from Lotus Notes

User Permissions Needed	
To create accounts from Lotus Notes:	"Create" on accounts
To create contacts from Lotus Notes:	"Create" on contacts

User Permissions Needed	
To create leads from Lotus Notes:	"Create" on leads

In the Add to Salesforce and Associate Item dialogs, the Quick Create links allow you to rapidly add new accounts, contacts, or leads.

1. In the Quick Create area, click **Account**, **Contact**, or **Lead**. The links vary depending on your current context.
2. In the popup dialog, fill in the fields to add a new record. Fields marked with an asterisk (*) are required.
3. Click **Save**.

   The new record is immediately created and displays in the Matching Records box.
4. Optionally, click **View** to open the record in a new browser window.

Tip: To close the popup without saving, press the Esc key.

Note:

Your administrator may have customized Lotus Notes Edition to disallow certain operations such as synchronizing contacts or uploading attachments. If your administrator has prohibited a particular operation, all related commands will be disabled in your user interface.

Opening Salesforce Records from Lotus Notes

When viewing a contact, task, or nonrecurring calendar event in Lotus Notes, you can open that record's detail page in Salesforce:

1. In Lotus Notes, open an individual contact, task, or nonrecurring calendar event. Alternatively, select the item so there is a check mark next to it.

   Note that recurring events cannot be opened in Salesforce from Lotus Notes.
2. Choose **View in Salesforce** from either the right-click or **Actions** menus.
3. The Salesforce record opens in a browser window. Note that the window may open behind the other windows on your desktop.

Setting Lotus Notes Edition Options

To customize your Lotus Notes Edition options:

1. In IBM® Lotus Notes®, select **Actions ➤ Salesforce Options**.
2. Select each tab in the dialog to customize the Lotus Notes Edition options. See "Lotus Notes Edition Options" in the Salesforce online help for descriptions of each option.
3. Click **OK** to save your settings.

Lotus Notes Edition Options

Click each tab of the Lotus Notes Edition Options dialog to customize the settings described here.

Note: Some of these options may not be available if your IT administrators have deployed Lotus Notes Edition with a custom configuration.

General options

User Settings

Option	Description
`Username`	Your Salesforce username.
`Password`	Your Salesforce password.
`Server`	The URL of the Apex API server for Lotus Notes Edition to access your Salesforce data. Read only.

Click the **Verify** button to confirm that your username and password are correct.

General Preferences

Option	Description
`Display splash screen on Lotus Notes startup`	Enable or disable the Lotus Notes Edition window that briefly displays when Lotus Notes starts.
`Enable synchronization in Island mode`	Enable or disable synchronization when your Lotus Notes location is set to "Island (Disconnected)." If enabled, Lotus Notes Edition synchronizes with the local database on your computer instead of the database on your organization's Lotus Domino server. Also, Lotus Notes Edition assumes that you are connected to the Internet in order to synchronize with Salesforce.
`Display 'Sync completed' dialog`	Display a notification dialog when Lotus Notes Edition synchronization completes.

Visual Preferences

Option	Description
`Enable context-sensitive menus`	Enable or disable the context-sensitive display of commands in the Actions and right-click menus based on your current Lotus Notes operation. If disabled, all menu commands always display.

Synchronization Preferences

Option	Description
`Delete history and synchronize from scratch`	Remove your synchronization history. Your next synchronization will take place as if you had never before synchronized any records. When you select this option, Lotus Notes Edition removes the synchronized icons from all items that were previously synchronized.
`Synchronize on schedule every XX hours`	Enable automatic scheduled synchronizations every 1-8 hours.

In the General tab of the Lotus Notes Edition Options dialog, click **Help** to open Lotus Notes Edition online help. Click **About** to view your Lotus Notes Edition version number.

Contacts, Events, and Tasks Options for Synchronization

In the Contacts, Events, and Tasks tabs of the dialog, set these options to determine how your contacts, events, and tasks will be synchronized. You can set different options for each type of record.

Option	Description
`Synchronize Data with Salesforce`	Enable or disable synchronization between Lotus Notes and Salesforce.
`Data Movement`	Determine how data is treated during synchronization. Your choices are: • **Synchronize with Salesforce** - During synchronizations, records modified in Lotus Notes will be reflected in Salesforce, and vice versa. This is the default option and is recommended for most users. • **Import from Salesforce** - During its first synchronization, a record in Salesforce will create or update a record in Lotus Notes. If that record is ever modified in Lotus Notes, it will be skipped in future synchronizations. If the record is only modified in Salesforce, future synchronizations will cause the corresponding record in Lotus Notes to be updated. However, deleting a synchronized record in Salesforce will not cause its Lotus Notes counterpart to be deleted. • **Export to Salesforce** - During its first synchronization, a record in Lotus Notes will create or update a record in Salesforce. If that record is ever modified in Salesforce, it will be skipped in future synchronizations. If the record is only modified in Lotus Notes, future synchronizations will cause the corresponding record in Salesforce to be updated. However, deleting a synchronized record in Lotus Notes will not cause its Salesforce counterpart to be deleted. • **Import with Overwrites** - During its first synchronization, a record in Salesforce will create or update a record in Lotus Notes. At future synchronizations, any changes made in Salesforce will be reflected in Lotus Notes, regardless of whether the Lotus Notes version of the record had been changed in the meantime. However, deleting a synchronized record in Salesforce will not cause its Lotus Notes counterpart to be deleted. • **Export with Overwrites** - During its first synchronization, a record in Lotus Notes will

Option	Description
	create or update a record in Salesforce. At future synchronizations, any changes made in Lotus Notes will be reflected in Salesforce, regardless of whether the Salesforce version of the record had been changed in the meantime. However, deleting a synchronized record in Lotus Notes will not cause its Salesforce counterpart to be deleted.
`Folder Settings`	Read-only. The Lotus Notes folders where Lotus Notes Edition will look for items to synchronize. The items themselves must be marked for synchronization or they will not be synchronized. See "Synchronizing Your Contacts and Activities with Lotus Notes Edition" in the Salesforce online help for information on marking items for synchronization.

Advanced Contacts, Events, and Tasks Options for Synchronization

Click the **Advanced** button in the Contacts, Events, and Tasks tabs of the dialog to customize additional synchronization options. You can set different options for each type of record.

Option	Description
`Confirmation tab - Confirm record deletions`	Enable or disable confirmation when records will be deleted as a result of synchronization. This option is enabled by default so you will be asked to confirm any record deletions during synchronization.
`Confirmation tab - Confirm record changes and additions`	Enable or disable confirmation when records will be updated as a result of synchronization. This option is enabled by default so you will be asked to confirm any record updates during synchronization.
`Conflict tab`	In the Conflict tab, select an option to determine how Lotus Notes Edition handles conflicts between Salesforce data and Lotus Notes data during synchronization. • **Ignore all conflicts** - Records with conflicts are not synchronized. • **Notify me when conflicts occur** - Lotus Notes Edition notifies you of any conflicts so you can manually resolve them. This is the default option. See "Resolving Data Conflicts During Lotus Notes Edition Synchronization" in the Salesforce online help. • **Salesforce always wins** - The value in the Salesforce record is always accepted when a conflict occurs.

Option	Description
	• **Lotus Notes always wins** - The value in Lotus Notes is always accepted when a conflict occurs.
`Options tab - Synchronization Scope`	Determines time frame for synchronized tasks and events. This option is in the Options tab of the advanced settings for tasks and events. The choices for events are: • **Today and future events** - Only events with a date of today or greater that are marked for synchronization will be synchronized. • **All events** - All events, including past events, that are marked for synchronization will be synchronized. The choices for tasks are: • **Open and recently closed tasks** - Only open tasks and tasks completed within the last seven days that are marked for synchronization will be synchronized. • **Import Salesforce tasks of type Email** - Only available if **Open and recently closed tasks** is selected. When this checkbox is deselected, tasks that have a `Type` value of "Email" are not imported into Lotus Notes during synchronization, provided the field-level security settings of the `Type` picklist make the picklist visible for your profile. The tasks affected by this option include, but are not limited to, emails that you have used Lotus Notes Edition to add to Salesforce as completed tasks. Note that the `Type` picklist must also be included on your task page layout if you want the picklist to be visible when viewing task records in Salesforce. • **All tasks** - All tasks, regardless of status, that are marked for synchronization will be synchronized.
`Field Maps tab`	Shows you how Salesforce fields are mapped to Lotus Notes fields for synchronization. To customize the field mapping, see "Mapping Custom Fields for Lotus Notes Edition Synchronization" in the Salesforce online help.

Email options

Related To Settings

Option	Description
Display by Default	Select the types of records to show by default when associating an email with a related record. Use Ctrl+click or Shift+click to select multiple types of records.

Search Settings

Option	Description
Maximum number of search results	The number of Salesforce records to show in the search results when associating items or finding names in the Address Book. The maximum number allowed is 200.
Automatically perform search for adding email	When adding an email to Salesforce, automatically run a search for matching contacts or leads.

Email Options

Option	Description
Display email added successfully dialog	Enable or disable the dialog that displays when a message is successfully added to Salesforce.
Show item after adding email	Automatically display the new task in a browser window after adding an email message to Salesforce.

Case Options

Option	Description
Show item after creating case	Automatically display the new case in a browser window after creating a case from an email message.

Browser Options

Option	Description
Always use new web browser	When opening Salesforce records from Lotus Notes, always open a new browser window rather than reusing an existing browser window.

Log File options

The Log File tab of the Lotus Notes Editions Options dialog shows the location of the Lotus Notes Edition log file. This location cannot be changed.

Click **View** to open the log file in a text editor. Click **Send** to send the log file to salesforce.com Customer Support for troubleshooting.

User Permissions options

The User Permissions tab of the Lotus Notes Edition Options dialog contains settings that an IT administrator can edit and save when deploying a customized configuration of Lotus Notes Edition to a group of end users. If your IT administrator has customized Lotus Notes Edition for your organization, this tab will not be available. See "Deploying Lotus Notes Edition System-Wide" in the Salesforce online help for more information.

Mapping Custom Fields for Lotus Notes Edition Synchronization

In the **Actions ➤ Salesforce Options** dialog box, you can view and customize the field mappings used for Lotus Notes Edition synchronization.

To map custom Salesforce fields to standard or custom Lotus Notes fields for synchronization:

1. From the Contacts, Events, or Tasks tabs, click **Advanced ➤ Field Maps ➤ New Mapping**. Each type of item has a different field mapping.
2. Choose a field from the `Salesforce Field` drop-down list. This drop-down list displays the names of all Salesforce fields that have not yet been mapped.

   Caution: If you map custom fields that are universally required, make sure the universally required fields have a default value so that Outlook Edition users will not encounter errors. Furthermore, avoid mapping custom fields that require validation by Salesforce in order to be created. For example, if you map a custom field whose values must be unique, a value that you manually add in Outlook may result in a uniqueness error during synchronization. For details about custom field attributes, see "Custom Field Attributes" in the Salesforce online help.

3. Choose a field from the `Lotus Notes Field` drop-down list. This drop-down list displays the names of the standard Lotus Notes fields for that kind of record.

   Note: Custom Lotus Notes fields do not display in this list. To map a Salesforce field to a custom Lotus Notes field, you must create the field within the field mapping dialog. Simply type the name of the new field into the box. The custom Lotus Notes field name must be a single word (no spaces) with only letters and numbers.

4. With very few exceptions, accept the default `Conversion` field value, "Use salesforce.com type."

   Note: The following are the only circumstances in which you should change the `Conversion` field from its default value:

   - If you are mapping a field that represents either a date or a date and time combination, then choose "date" or "datetime," respectively.
   - If you are mapping a field that represents the urgency of a task, then choose "Priority."
   - If you are mapping a field that represents the status of a task, then choose "Status."
   - If you are mapping a field that represents how other users see this time in your calendar, then choose "BusyStatus."

   If you change the default value of the `Conversion` field, the value will display in the `Type` column when you view your saved mappings.

5. Leave the `Matching` score and `Nonmatching` score fields at 50. If you modify these fields, it may cause duplicate records to be created. Modifying these fields is an advanced customization and we recommend that you leave the default values.
6. Click **OK** to save the new mapping.

To change the mapping for a specific field, select it from the list and click **Edit Mapping**. To delete the mapping for a field, select it from the list and click **Delete Mapping**.

Call Center Edition

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited** and **Developer** Editions

Call Center Edition seamlessly integrates Salesforce with third-party computer-telephony integration (CTI) systems. After a lightweight CTI adapter program has been installed on a Salesforce user's machine, the user can use the features of a CTI system through the Salesforce SoftPhone, a customizable call control tool that appears in the sidebar of every Salesforce page.

The SoftPhone allows Salesforce users to:

- Make calls by dialing a number in the SoftPhone, choosing a number in an online directory, or clicking a phone number in any contact, lead, activity, or account
- Receive calls
- Quickly view all Salesforce records that are related to the call, such as contacts, cases, or accounts
- Transfer calls
- Initiate conference calls
- Put callers on hold
- Attach records to calls
- Generate automatic call logs

Administrators can configure Call Center Edition by:

- Modifying SoftPhone layouts and assigning them to selected user profiles
- Adding phone numbers to call center directories

Developers can use Salesforce Call Center Edition code libraries to:

- Customize the functionality of existing CTI adapters
- Build new CTI adapters for phone systems that are not yet supported

Implementation Tips

- Call Center Edition is available as a limited release. Contact salesforce.com to learn how your organization can begin using it.
- Call Center Edition is best suited for call centers that:
  - Include fewer than 500 call center agents
  - Receive or initiate fewer than 250,000 calls per day
  - Do not operate 24x7
- Any machine that uses Call Center Edition must have a CTI adapter installed. A CTI adapter is a light-weight software program that acts as an intermediary between a third-party CTI system, salesforce.com, and a Salesforce user. Because a CTI adapter communicates directly with an individual CTI system, an organization must use a different CTI adapter for each type of CTI system that is in use. You can download CTI adapters for a variety of CTI systems from the AppExchange.
- Call Center Edition does not support Internet Explorer 7 or Firefox. Use Internet Explorer 6 instead.

Best Practices

- Create directory numbers for conference rooms and queues that are accessible to a particular call center.
- Ensure that internal call SoftPhone layouts contain the User object.

- Design your call center's interactive voice response scripts so that they attach data to calls in the format prescribed in the Call Center Edition Developer's Guide.
- See the Call Center Edition Developer's Guide for information on customizing Call Center Edition beyond the scope of what is currently offered on the AppExchange.

About Call Center Edition

Call Center Edition System Requirements

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Call Center Edition requires the installation of a light-weight computer-telephony integration (CTI) adapter on every Salesforce user's machine. The minimum system requirements for this adapter are:

- Internet Explorer 6.0
- Windows XP
- 256 MB of RAM (512 MB recommended)
- 20 MB disk space minimum
- P2 500Mhz processor or above

Setting Up Call Center Edition

User Permissions Needed	
To manage call centers, call center users, call center directories, and SoftPhone layouts:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Before Salesforce users can access Call Center Edition features, an administrator must perform the following tasks:

1. Install a CTI adapter on every call center user machine. Call Center Edition features are not available on machines that do not have an adapter installed.
2. Define a new call center record for every computer-telephony integration (CTI) system in use at your organization.
3. Assign Salesforce users to the appropriate call center. A Call Center Edition user must be associated with a call center to view the SoftPhone user interface.
4. Optionally, configure call center phone directories with additional directory numbers and updated phone number search layouts.
5. Optionally, customize SoftPhone layouts for different user profiles, so that the SoftPhone of a salesperson might show related leads, accounts, and opportunities, while the SoftPhone of a support rep might show related cases and solutions.

Deploying Adapters to Call Center Machines

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Any machine that uses Call Center Edition must have a CTI adapter installed. A CTI adapter is a light-weight software program that controls the appearance and behavior of a Salesforce SoftPhone. The adapter acts as an intermediary between a third-party CTI system, Salesforce, and a Call Center Edition user. It must be installed on any machine that needs access to Call Center Edition functionality.

Because a CTI adapter communicates directly with an individual CTI system, an organization must use a different CTI adapter for each type of CTI system that is in use. For example, if an organization wants to integrate one call center that runs Cisco IPCC Enterprise™ and one call center that runs Cisco IPCC Express™, the organization must have two CTI adapters available. A call center user's machine only requires the SoftPhone CTI adapter for the call center to which it connects.

To download a SoftPhone CTI adapter from salesforce.com, visit the AppExchange. The adapter installation package includes both the adapter setup files and a call center definition file that can be used in conjunction with the adapter.

To install a CTI adapter on a single machine, run the CTI adapter's `Setup.exe` application as a Windows administrator user.

To deploy a CTI adapter to all the machines in a call center at once, use the `.msi` file that is packaged with the installer and your preferred Software Management System.

Once a CTI adapter is installed, you can perform the following operations:

- Start the CTI adapter application by clicking **Start ➤ Programs ➤ salesforce.com ➤ <Your CTI System Name> Adapter**. You can verify that the CTI adapter is running by looking for the icon in the system tray of the computer.
- Stop the CTI adapter application by right-clicking the system tray icon and choosing **Exit**.
- Modify CTI adapter log settings by right-clicking the system tray icon and choosing **Logging...**. In the CTI Log Settings dialog:
  - Select the types of messages that you want to log. Keep log levels at **Low - Errors** unless you are troubleshooting an issue with your adapter.
  - Specify the location for the two log files that the CTI adapter generates. For more information on these files, see the Call Center Edition Developer's Guide.

Creating a Call Center

User Permissions Needed	
To create a call center by importing or cloning:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

A call center in Call Center Edition corresponds to a single computer-telephony integration (CTI) system already in place at your organization. Salesforce users must be assigned to a call center record before they can use any Call Center Edition features.

There are two ways to create a call center record in Salesforce:

- Import a call center definition file into Salesforce. Use this method to create your first call center for a CTI adapter that was just installed.

- Clone an existing call center definition. Use this method to create additional call centers for a particular CTI adapter. For example, if you already have a call center record for a Cisco IPCC Enterprise™ call center based in one location, you can clone that record for a Cisco IPCC Enterprise call center based in another location.

To view a list of call centers that have already been created, click **Setup ➤ Customize ➤ Call Center Edition ➤ Call Centers**.

Call Center Definition Files

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

A call center definition file specifies a set of fields and values that are used to define a call center in Salesforce for a particular CTI adapter. Salesforce uses call center definition files in order to support the integration of Call Center Edition with multiple CTI system vendors.

By default, any CTI adapter installation package includes a default call center definition file that works specifically with that adapter. This XML file is located in the adapter installation directory and is named after the CTI system that it supports. For example, the Cisco IPCC Enterprise™ adapter's default call center definition file is named `CiscoIPCCEnterprise7x.xml`.

The first instance of a call center for a particular CTI adapter must be defined by importing the adapter's call center definition file into Salesforce. Subsequent call centers can be created by cloning the original call center that was created with the import.

If your organization modifies an adapter or builds a new one, you must customize the adapter's call center definition file so that it includes any additional call center information that is required. For example, if you are building a CTI adapter for a system that supports a backup server, your call center definition file should include fields for the backup server's IP address and port number. CTI adapters for systems that do not make use of a backup server do not need those fields in their associated call center definition files.

Note: Once a call center definition file has been imported into Salesforce, the set of fields that were specified in the file cannot be modified. The values assigned to those fields, however, can be changed within Salesforce.

See the following topics for information about creating and importing a call center definition file:

- To create a call center definition file for a custom CTI adapter, see "Creating a Call Center Definition File" in the Salesforce online help.
- To view a sample call center definition file, see "Sample Call Center Definition File" in the Salesforce online help.
- To import a call center definition file into Salesforce, see "Importing a Call Center Definition File" in the Salesforce online help

Importing a Call Center Definition File

User Permissions Needed	
To import call center definition files:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To create your first call center for a CTI adapter that was just installed, you can import the adapter's default call center definition file into Salesforce:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ Call Centers**.

2. Click **Import**.
3. Next to the `Call Center Definition File` field, click **Browse** to navigate to the default call center definition file in your CTI adapter installation directory. This XML file is named after the type of CTI system that the adapter supports. For example, the Cisco™ IPCC Enterprise adapter's default call center definition file is named `CiscoIPCCEnterprise7x.xml`. Click **Open** to enter the path in the `Call Center Definition File` field.
4. Click **Import** to import the file and return to the All Call Centers page. The new call center record is listed with the other call centers in your organization.

   Note: If you receive the error "A call center with this internal name already exists," a call center definition file for this CTI adapter has already been imported into Salesforce. To create additional call center records for this CTI adapter, clone the adapter's existing call center, or modify the call center definition file to include a different value for `reqInternalName`.

5. Click **Edit** next to the name of the new call center to modify the call center's settings .

To create additional call centers for a particular CTI adapter, see "Cloning a Call Center" in the Salesforce online help.

To define a new call center definition file for a CTI adapter that was customized specifically for your organization, see "Creating a Call Center Definition File" in the Salesforce online help.

Creating a Call Center Definition File

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

If you have built a custom CTI adapter you must write a call center definition file to support it. Use a text or XML editor to define an XML file according to the guidelines outlined in the following topics:

- Call Center Definition XML Format
- Required Call Center Elements and Attributes
- Specifying Values for <item> Elements
- "Sample Call Center Definition File" in the Salesforce online help

Call Center Definition XML Format

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

A call center definition file consists of three XML elements: `callCenter`, `section`, and `item`. The following list provides details about the properties and attributes of each element:

callCenter
This element represents a definition for a single call center phone system. At least one `<callCenter>` element must be included in every call center definition file. A `<callCenter>` element consists of one or more `<section>` elements.

section
This element represents a grouping of related data fields, such as server information or dialing prefixes. When a call center is edited in Salesforce, fields are organized by the section to which they are assigned. A `<section>` element belongs to a single `<callCenter>` element, and consists of one or more `<item>` elements.
Attributes:

Name	Type	Required?	Description
`sortOrder`	Positive Integer	Required	The order in which the section should appear when the call center is edited in Salesforce. For example, a section with `sortOrder="1"` comes just before a section with `sortOrder="2"`. The values for `sortOrder` must be non-negative integers, and no numbers can be skipped within a single call center definition. For example, if there are three section elements in a call center definition file, one `<section>` element must have `sortOrder="0"`, one `<section>` element must have `sortOrder="1"`, and one `<section>` element must have `sortOrder="2"`.
`name`	String	Required	The internal name of the section as defined in the Salesforce database. You can use this value to refer to the section when writing custom adapter code. Names must be composed of only alphanumeric characters with no white space or other punctuation. They are limited to 40 characters each. Names beginning with "req" are reserved for requiredSalesforce sections only (see "Required Call Center Elements and Attributes" in the Salesforce online help). Other reserved words that cannot be used for the `name` attribute include “label”, “sortOrder”, “internalNameLabel”, and “displayNameLabel”.
`label`	String	Optional	The name of the section when viewed in Salesforce. Labels can be composed of any string of UTF-8 characters. They are limited to 1000 characters each.

item

This element represents a single field in a call center definition, such as the IP address of a primary server or the dialing prefix for international calls. When call centers are edited in Salesforce, each `<item>` element is listed under the section to which it belongs. You can have multiple `<item>` elements in a `<section>` element.

Attributes:

Name	Type	Required?	Description
`sortOrder`	Positive Integer	Required	The order in which the item should appear when the call center is edited in Salesforce. For example, an item with `sortOrder="1"` comes just before an item with `sortOrder="2"`. The values for `sortOrder` must be non-negative integers, and no numbers can be skipped within a single call center definition. For example, if there are three item elements in a call center definition file, one `<item>` element must have `sortOrder="0"`, one

Name	Type	Required?	Description
			<item> element must have sortOrder="1", and one <item> element must have sortOrder="2".
name	String	Required	The internal name of the item as defined in the Salesforce database. You can use this value to refer to the item when writing custom adapter code. Names must be composed of only alphanumeric characters with no white space or other punctuation. They are limited to 40 characters each. Names beginning with "req" are reserved for requiredSalesforce sections only (see "Required Call Center Elements and Attributes" in the Salesforce online help). Other reserved words that cannot be used for the name attribute include “label”, “sortOrder”, “internalNameLabel”, and “displayNameLabel”.
label	String	Optional	The name of the item when viewed in Salesforce. Labels can be composed of any string of UTF-8 characters. They are limited to 1000 characters each.

Required Call Center Elements and Attributes

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Certain <section> and <item> elements are required in every call center definition file and must be included according to the following rules:

- There must be one <section> that includes <item> elements with the following names:

<item> Name	Description
reqInternalName	Represents the unique identifier for the call center in the database. It must have a sortOrder value of "0", and its value must be specified in the call center definition (see "Specifying Values for <item> Elements" in the Salesforce online help). A value for "reqInternalName" must be composed of no more than 40 alphanumeric characters with no white space or other punctuation. It must start with an alphabetic character and must be unique from the "reqInternalName" of all other call centers defined in your organization.
reqDisplayName	Represents the name of the call center as displayed in Salesforce. It must have a sortOrder value of "1". A value for "reqDisplayName" has a maximum length of 1000 UTF-8 characters.
reqDescription	Represents a description of the call center. A value for "reqDescription" has a maximum length of 1000 UTF-8 characters.
reqProgId	Represents the Program ID (progId) of the CTI adapter that should be used for this call center. This value is specified in the default call center definition

<item> Name	Description
	file that comes bundled with every CTI adapter installer, or in the base COM class of a custom CTI adapter.

You can add additional <item> elements to this section if needed.

- There must be one <section> that includes <item> elements with the following names:

<item> Name	Description
reqOutsidePrefix	Represents the dialing prefix for calls outside the call center
reqLongDistancePrefix	Represents the dialing prefix for long distance calls
reqInternationalPrefix	Represents the dialing prefix for international calls

The value for each of these <item> elements, if specified, must contain only digits (0-9).

Specifying Values for <item> Elements

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

With the exception of the "reqInternalName" <item>, whose value must always be specified in a call center definition file, you can specify <item> values either in the call center definition file or in Salesforce once the definition file has been imported.

To specify a value for an <item> element in a cell center definition file, place the value between the opening and closing tags of the <item>. For example:

```
<item sortOrder="0" name="reqInternalName" label="Call Center Internal
Label">MyCallCenter</item>
```

sets the value of the "reqInternalName" <item> to "MyCallCenter". Note that any <item> value other than the value for "reqInternalName" can be edited in Salesforce after the call center definition is imported.

Sample Call Center Definition File

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

The following XML code makes up a sample call center definition file. For more information on the XML format of a call center definition file, see "Creating a Call Center Definition File" in the Salesforce online help.

```
<!--
     All sections and items whose name value begins with "req" are
     required in a valid call center definition file. The sortOrder
     and label attributes can be changed for all required sections
     and items except reqGeneralInfo, reqInternalName, and
     reqDisplayName, in which only the label attribute can be altered.

   Note that the value for the reqInternalName item is limited to
     40 alphanumeric characters and must start with an alphabetic
```

```
     character. reqInternalName must be unique for all call centers
     that you define.
-->

<callCenter>

<section sortOrder="0" name="reqGeneralInfo" label="General Info">
   <item sortOrder="0" name="reqInternalName"
         label="Internal Name">callCenter001</item>
   <item sortOrder="1" name="reqDisplayName"
         label="Display Name">My Call Center</item>
   <item sortOrder="2" name="reqDescription"
         label="Description">Located in San Francisco, CA</item>
 <item sortOrder="3" name="reqProgId"
         label="CTI Connector ProgId">MyAdapter.MyAdapter.1</item>
</section>

<section sortOrder="1" name="ServerInfo" label="CTI Server Info">
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         label="Host A">Host A</item>
   <item sortOrder="1" name="PortA"
         label="Port A">Port A</item>
   <item sortOrder="2" name="HostB"
         label="Host B">Host B</item>
   <item sortOrder="3" name="PortB"
         label="Port B">Port B</item>
   <item sortOrder="4" name="PeripheralID"
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</section>

<section sortOrder="2" name="reqDialingOptions" label="Dialing Options">
   <item sortOrder="0" name="reqOutsidePrefix"
         label="Outside Prefix">1</item>
   <item sortOrder="1" name="reqLongDistPrefix"
         label="Long Distance Prefix">9</item>
   <item sortOrder="2" name="reqInternationalPrefix"
         label="International Prefix">01</item>
</section>

</callCenter>
```

Cloning a Call Center

User Permissions Needed	
To view and clone a call center:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To create more than one call center for a particular CTI adapter, you can clone an existing one. For example, if you already have a call center record for a Cisco IPCC Enterprise™ call center based in one location, you can clone that record for a Cisco IPCC Enterprise call center based in another location.

To clone a call center:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ Call Centers**.
2. Click the name of the call center that you want to clone.
3. Click **Clone**. This action opens a new call center for editing with the same fields and values as the original call center. Only the `Internal Name` field is left intentionally blank to allow you to provide a new name. This name is limited to 40

alphanumeric characters and must start with an alphabetic character. `Internal Name` must be unique for every call center defined in your organization. For more information, see "Call Center Fields" in the Salesforce online help.

4. Make any additional changes to the new call center as necessary.
5. Click **Save** to save the new call center, or click **Cancel** to return to the All Call Centers page without saving the cloned call center.

Displaying and Editing a Call Center

User Permissions Needed	
To view or edit a call center:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

A call center in Call Center Edition corresponds to a single computer-telephony integration (CTI) system already in place at your organization. Salesforce users must be assigned to a call center record before they can use any Call Center Edition features.

To view call center details:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ Call Centers**.
2. Click the name of the call center that you want to view.

From the Call Center Detail page you can:

- Click **Edit** to modify the properties of the call center.
- Click **Delete** to erase the call center record from Salesforce. When you delete a call center, all associated directory numbers are also deleted. Any users associated with the call center must be reassigned to another call center to continue using Call Center Edition features.
- Click **Clone** to create a duplicate copy of the call center with the same fields and values as the current call center.
- Click **Manage Call Center Users** to designate Salesforce users as members of this call center.

Call Center Fields

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

All call centers include the following required fields, though additional fields may be available depending on the content of the call center definition file that was used to create the call center:

Field	Description
`Internal Name`	Represents the unique identifier for the call center in the database. `Internal Name` must be composed of no more than 40 alphanumeric characters with no white space or other punctuation. It must start with an alphabetic character and must be unique from the `Internal Name` of all other call centers defined in your organization. Once a value for `Internal Name` has been saved for a call center, it cannot be changed.
`Display Name`	Represents the name of the call center as displayed in Salesforce. It must have a `sortOrder` value of "1". `Display Name` has a maximum length of 1000 UTF-8 characters.

Field	Description
`Description`	Represents a description of the call center. `Description` has a maximum length of 1000 UTF-8 characters.
`CTI Connector ProgId`	Represents the Program ID (progId) of the CTI adapter that should be used for this call center. This value is specified in the default call center definition file that comes bundled with every CTI adapter installer, or in the base COM class of a custom CTI adapter.
`Outside Prefix`	Represents the dialing prefix for calls outside the call center
`Long Distance Prefix`	Represents the dialing prefix for long distance calls
`International Prefix`	Represents the dialing prefix for international calls

Managing Call Center Users

User Permissions Needed	
To add or remove users from a call center:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

A Salesforce user cannot view Call Center Edition features unless an administrator has assigned the user to a call center. See the following for instructions:

- Adding a User to a Call Center
- Removing a User from a Call Center

Every call center user has access to a set of personal SoftPhone settings that specify:

- Whether the user should be automatically logged into his or her SoftPhone when he or she logs into Salesforce
- How a record should be displayed when it is the only one that matches an incoming call

To change the default personal SoftPhone settings for all new call center users, use the Apex API. For information, see the Apex API guide available at http://www.appexchange.com.

Adding a User to a Call Center

User Permissions Needed	
To add users to a call center:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To add a user to a call center in Call Center Edition:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ Call Centers**.
2. Click the name of the call center to which you want to assign the Salesforce user.
3. In the Call Center Users related list, click **Manage Call Center Users**.

4. Click **Add More Users**.
5. Specify search criteria to find the Salesforce users who should be assigned to the call center. For more information, see "Entering Filter Criteria" in the Salesforce online help.
6. Click **Find** to display the list of Salesforce users that meet your search criteria. All users who already belong to a call center are excluded from search results because a user can only be assigned to one call center at a time.
7. Select the checkbox next to each user who should be assigned to the call center and click **Add to Call Center**.

Alternatively, you can change a particular user's call center in the User Edit page:

1. Click **Setup ➤ Manage Users ➤ Users**.
2. Click **Edit** next to the name of the user.
3. Modify the `Call Center` field as appropriate. You can change the user's call center by clicking and choosing a new call center, or you can remove the user from his or her current call center by deleting the call center name from the field.

Removing a User from a Call Center

User Permissions Needed	
To remove users from a call center:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To remove a user from a call center in Call Center Edition:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ Call Centers**.
2. Click the name of the call center from which you want to remove the Salesforce user.
3. In the Call Center Users related list, click **Manage Call Center Users**.
4. Click **Remove** next to the name of the user that you want to remove from the call center.

   To remove multiple users at once, select the `Action` checkbox next to each user you want to remove and click **Remove Users**.

Alternatively, you can change a particular user's call center in the User Edit page:

1. Click **Setup ➤ Manage Users ➤ Users**.
2. Click **Edit** next to the name of the user.
3. Modify the `Call Center` field as appropriate. You can change the user's call center by clicking and choosing a new call center, or you can remove the user from his or her current call center by deleting the call center name from the field.

Customizing a Call Center Directory

User Permissions Needed	
To manage call center directories:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Every call center in Call Center Edition includes a call center directory that allows users to search for phone numbers throughout your organization. You can customize call center directories by:

- Adding additional directory numbers, either to a single call center or to all defined call centers in your organization
- Updating phone number search layouts

Adding a Number to a Call Center Directory

User Permissions Needed
To view, add, edit, or delete an additional directory number: "Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To customize call center directories by adding additional directory numbers, either to a single call center or to all defined call centers in your organization:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ Directory Numbers**. From this page, you can:
   - Click **Edit** to edit an existing additional directory number.
   - Click **Del** to delete an existing additional directory number.
   - Click the name of an existing additional directory number to view its details in the Additional Directory Number Detail page. From this page you can click **Edit** to edit the number, click **Delete** to delete it, or click **Clone** to quickly create a new additional directory number with the same information as the existing number.
2. Click **New** to define a new additional directory number.
3. In the `Name` field, enter a label that identifies the additional directory number.
4. In the `Phone` field, enter the phone number, including any international country codes. Dialing prefixes, such as 9 or 1, do not need to be included.
5. In the `Call Center` field, select the call center directory to which you want to add the new directory number. To add the number to every call center directory in your organization, choose -- Global --.
6. In the `Description` field, optionally enter text that provides further information about the additional directory number.
7. Click **Save** to save the number and return to the All Additional Directory Numbers page. Alternatively, click **Save & New** to save the number and create another.

Tip: If you have a large number of directory numbers to define, use the Salesforce Data Loader to create them in one step.

Customizing SoftPhone Layouts

User Permissions Needed
To view, create, edit, or delete a SoftPhone layout: "Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

A SoftPhone is a customizable call control tool that appears in the sidebar of every Salesforce page if a user is assigned to a call center and is working on a machine on which a CTI adapter has been installed. Similar to page layouts, you can design custom SoftPhone layouts and assign them to Call Center Edition users based on their user profile. See the following for information:

- Designing a Custom SoftPhone Layout
- Assigning a SoftPhone Layout to a User Profile

Designing a Custom SoftPhone Layout

User Permissions Needed	
To view, create, edit, or delete a SoftPhone layout:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

In a SoftPhone layout you can control the call-related fields that are displayed and the Salesforce objects that are searched for an incoming call. To design a custom SoftPhone layout:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ SoftPhone Layouts**.
2. Click **New** to create a new SoftPhone layout definition, or click **Edit** next to the name of an existing layout definition to view or modify it.
3. In the `Name` field, enter a label that uniquely identifies your SoftPhone layout definition.
4. In the `Select Call Type` picklist, choose the type of call for which the currently-displayed SoftPhone layout should be used. Every SoftPhone layout definition allows you to specify different layouts for inbound, outbound, and internal calls. These three layouts are grouped together in a single SoftPhone layout definition.
5. In the `Display these call-related fields` section, click **Edit** to add, remove, or change the order of fields in the currently-displayed SoftPhone layout:

   - To add a field to the SoftPhone layout, select it in the Available list and click **Add**.
   - To remove a field from the SoftPhone layout, select it in the Selections list and click **Remove**.
   - To change the order of a field in the SoftPhone layout, select it in the Selections list and click **Up** or **Down**.

   Any changes that you make are automatically updated in the SoftPhone layout preview image on the right side of the page. To hide the Available and Selections lists, click **Collapse**.

   Note: Phone-related fields that you select in a SoftPhone layout will only appear in a user's SoftPhone if a valid value for that field is available. For example, if you add a Caller ID field to the layout of an outbound call, Caller ID will not appear.

6. In the `Display these Salesforce Objects` section, click **Add/Remove Objects** to add, remove, or change the order of links to call-related objects.
7. Below the list of selected objects, click **Edit** next to each `If single <Object> found, display` row to specify the fields that should be displayed in the SoftPhone layout if a single record for that object is the only record found. You can add, remove, or change the order of fields.
8. Configure SoftPhone layouts for any remaining call types in the `Select Call Type` picklist.
9. Click **Save**.

Assigning a SoftPhone Layout to a User Profile

User Permissions Needed	
To assign a SoftPhone layout to a user profile:	"Manage Call Centers"

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Once you have defined one or more custom SoftPhone layouts, you can assign them to user profiles:

1. Click **Setup ➤ Customize ➤ Call Center Edition ➤ SoftPhone Layouts**.
2. Click **Layout Assignment**.
3. For each user profile that appears in the page, select the SoftPhone layout that the profile should use. Profiles are only listed in this page if they include users that are currently assigned to a call center, or if they have already been assigned a custom SoftPhone layout.
4. Click **Save**.

Note: Call center users will see their newly assigned SoftPhone layout the next time they log into Salesforce.

Using the SoftPhone

User Permissions Needed	
To view and use the SoftPhone:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

The Call Center Edition SoftPhone appears in the left side bar of yourSalesforce window. You can use it to perform the following functions:

- Log in to your call center
- Modify your call center state to show whether you are ready to receive a new call
- Dial a phone number by using the built-in SoftPhone, or by clicking the icon next to any phone number associated with a contact, lead, activity, or account
- Look up a phone number in your custom call-center directory
- Answer a phone call from another call center user or an external number
- Put a caller on hold
- Initiate a conference call with another call center user or an external number
- Transfer a phone call to another call center user or an external number
- Add comments to or associate Salesforce records with an automatic call log to quickly record information related to a call
- Edit personal Call Center Edition settings to customize the behavior of your SoftPhone

Note: The sidebar cannot be collapsed if you are a Call Center Edition user.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Logging In to the SoftPhone

User Permissions Needed	
To log in to Call Center Edition:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Call Center Edition requires you to first log in to Salesforce and then to log in separately to your organization's phone system. The phone system login is located in the sidebar and only appears if you are:

- Assigned to a call center in Salesforce
- Using a machine on which an appropriate CTI adapter is installed. (You can quickly verify that an adapter is installed by looking for the icon in the system tray of your computer. The system tray is located next to the clock in the lower-right corner of your monitor.)

If a phone system login does not appear, contact your administrator.

Depending on the phone system that your organization uses, the login prompts you to enter your user ID, password, and other credentials. Once you have entered these values, click **Log In** to complete the connection to your phone system.

To automatically log in to your phone system without having to click the **Log In** button:

1. Click **Setup ➤ Call Center Settings ➤ My SoftPhone Settings**.
2. Select `Automatically log in to your call center when logging into Salesforce`. Once you have logged in to your phone system once, Salesforce remembers your login information and automatically makes a connection to your phone system whenever you log in to Salesforce.

Note: If you explicitly log out of the phone system at any time while you are logged in to Salesforce, automatic log in is turned off for the remainder of your Salesforce session. To reenable automatic log in, log out of Salesforce and then log back in.

After logging in to a phone system, your call center state is automatically set to Not Ready for Calls. If you want to receive calls, you must change your call center state to Ready for Calls.

Changing Your Call Center State

User Permissions Needed	
To change your call center state:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

While logged in to Call Center Edition, there may be times when you do not want to receive calls on your SoftPhone, or when you need to step away from your desk. To avoid receiving calls when you do not want them, you can set your call center state next to the icon in the SoftPhone. Possible values for call center state include:

Call Center State	Description
Ready for Calls	You are not currently on a call, and you are prepared to receive the next direct or queued call.
Not Ready for Calls	You are not currently on a call, and you are not prepared to receive the next queued call. In this state you can still receive calls that are dialed directly to your extension.
On a Call	You are currently connected to a caller and cannot receive either a direct or a queued call.
Wrap-Up	You are currently on a call, and you wish to go directly to the Not Ready for Calls state when the call is complete.
Log Out	You want to log out from your call center phone system and remain logged in to Salesforce. After selecting this option, Call Center Edition automatically closes the connection to your call center and displays the SoftPhone login screen.

When you first log in to Call Center Edition, your call center state is automatically set to Not Ready for Calls. You must choose Ready for Calls from the drop-down list before you can receive any calls.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Making a Call Using the SoftPhone

User Permissions Needed	
To make a call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

In Call Center Edition there are three ways to make a call:

- Making a Call by Dialing a Number Manually
- Making a Call Using the Call Center Directory
- Making a Call Using Click-to-Dial

While on a call, you can also make a call on a second phone line by clicking **New Line**. The new line allows you to enter a new phone number while remaining connected to your original caller. Once you click **Dial**, your original call is placed on hold, and your new call begins.

Note: If you make a call while your call center state is set to Ready for Calls, your state moves directly to Not Ready, and you must enter Not Ready reason codes if this is enabled for your call center.

To end a call that you just dialed, click **End Call**.

Note: Some phone systems do not allow you to end a call from a SoftPhone before it is answered. In these cases, an **End Call** button is not displayed, and you must use your physical phone set to terminate the call.

If a number you dial is busy, a message appears and you have the option to dial again or cancel the call.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Making a Call by Dialing a Number Manually

User Permissions Needed	
To make a call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To make a call in Call Center Edition by manually dialing a number:

1. In the SoftPhone, click the name of the open line that you want to use. This action opens the dial pad for that line.
2. Enter the phone number that you want to dial by clicking the number buttons on the dial pad, or by typing numbers on your keyboard.
3. Click **Dial** or press the Enter key on your keyboard.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Making a Call Using the Call Center Directory

User Permissions Needed	
To make a call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To make a call in Call Center Edition using the call center directory:

1. In the SoftPhone, click the name of the open line that you want to use. This action opens the dial pad for that line.
2. Click next to the dial pad to open your call center directory.
3. Use the directory to locate the number that you want to dial.

4. When you have found the number, click the name associated with the number to automatically enter the number into the dial pad.
5. Click **Dial** or press the Enter key on your keyboard.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Making a Call Using Click-to-Dial

User Permissions Needed	
To make a call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To make a call directly from the phone field of a contact, lead, activity, or account using Call Center Edition:

1. Locate the number that you want to dial in a contact, lead, activity, or account.
2. Click the button to the right of the number. The number is automatically dialed in the first open SoftPhone line.

Note:

- A number that has already been clicked cannot be clicked again for five seconds.
- The button does not appear next to fax numbers.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Using the Call Center Directory

User Permissions Needed	
To use a call center directory:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Every call center has an associated call center directory that includes the name and number of every user that belongs to that call center, as well as other phone numbers that are related to records in your system.

To use your call center directory:

1. In the SoftPhone, click the name of the open line that you want to use. This action opens the dial pad for that line. Click next to the dial pad to open your call center directory.
2. Search the call center directory for a phone number:
   a. In the **Pick an object** drop-down, choose the type of record that you want to search. Any object with a phone number field is included in this list.

b. In the **Search** text box, type all or part of the name for which you are searching. For a list of the fields that are searched for a particular object, see "Lookup Dialog Search Fields" in the Salesforce online help.
c. Click **Go** to view a list of only those records that include your search text.

3. When you find the phone number that you want, click its associated record name to automatically enter the number into the SoftPhone.
4. Click **Dial** to make the call.

Answering a Call Using the SoftPhone

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

User Permissions Needed	
To answer calls with a SoftPhone:	Member of a call center

When logged in to a SoftPhone, you can receive a call when:

- The call originates from a queue and your call center state is set to Ready for Calls
- The call is dialed directly to your extension and you are not already on a call

You can tell that you have an incoming call if you see a flashing red button and the words "Incoming Call," "Incoming Transfer," or "Incoming Conference" next to the name of a telephone line in your SoftPhone.

Details about the call, if any, are displayed just above the **Answer** button, and typically include the phone number of the caller and the number that the caller dialed to reach you. When the caller's phone number can be matched with a number in an existing Salesforce record, a link to that record is also displayed. Likewise, if your call center prompts callers to enter an account number or other data before being connected with a representative, your SoftPhone searches for records that contain that information and automatically displays links to matching results.

To answer an incoming call, you can:

- Click **Answer** in the SoftPhone.
- Use your physical telephone set to pick up the call.

When you answer a call, the `Call Duration` clock starts ticking, and your call center state is automatically set to Busy. If you do not answer the call, the system forwards it to another user and your call center state is automatically set to Not Ready for Calls.

Once you have answered a call, you can:

- Log comments and associate Salesforce records with the call
- Put the caller on hold
- Transfer the call to another call center user
- Conference another call center user into the call
- End the call

Note: If your SoftPhone supports multiple lines and you have a call established on one telephone line when you answer a call on a second line, the first call will automatically be put on hold.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Putting a Caller on Hold Using the SoftPhone

User Permissions Needed	
To put a caller on hold:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Call Center Edition allows you to put any caller on hold so that the caller cannot hear you speaking. To put a caller on hold, click **Hold** in the SoftPhone line that is currently active. The `Hold Time` clock that shows how long the caller has been waiting automatically starts, and the line light icon ( ) begins to blink yellow.

To resume the call, click **Retrieve from Hold**. If you want to end the call without retrieving the caller from hold, click **End Call**.

Note:

- Callers are automatically put on hold whenever you initiate a call transfer, dial a number on a second line, or initiate a conference call.
- If you click **Hold** while on a conference, your line becomes mute but other conference participants can still speak to one another.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Making a Conference Call Using the SoftPhone

User Permissions Needed	
To initiate a conference call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To initiate a conference call with another call center user or an outside phone number:

1. While on a call, click **Conference** in the SoftPhone line that is currently active. Your caller is automatically put on hold and a new dial pad becomes active.
2. Use the dial pad, your keyboard, or the phone directory to enter the phone number of the person who you want to include in the conference.
3. Click **Initiate Conference**. Your first caller remains on hold while you are on the call with the destination number. If a number you dial is busy, a message appears and you have the option to dial again or cancel the call.
4. Once you have connected with the second caller and are ready to start the conference, click **Complete Conference**. The second caller joins the first on your original telephone line and all three of you can speak freely to one another. If you no longer want to conference the call after dialing the second number, click **Cancel Conference** to hang up on the second caller and return to your original caller.

Note:

- If you click **Hold** while on a conference, your line becomes mute but other conference participants can still speak to one another.
- Some phone systems limit the number of callers who can be conferenced on a single line. See your administrator for details.

Transferring a Call Using the SoftPhone

User Permissions Needed	
To transfer a call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

To transfer a call to another call center user or to an external phone number:

1. Attach any relevant Salesforce records to the call that you want to transfer. For example, if you created a case for the call, save it, and make sure that it is selected in one of the `Related To` fields of the current call log. By doing this, the user to whom you are transferring the call will have access to the case in his or her SoftPhone.
2. Click **Transfer** in the SoftPhone line that you want to transfer. You remain on the line with your first caller and a new dial pad becomes active.
3. Use the dial pad, your keyboard, or the call center directory to enter the phone number of the person to whom the call should be transferred.
4. Click **Initiate Transfer**. Your first caller is automatically put on hold while you are on the call with the destination number. If a number you dial is busy, a message appears and you have the option to dial again or cancel the call.
5. When you are ready to transfer your first caller to the destination number, click **Complete Transfer**. If you no longer want to transfer the call, click **Cancel Transfer**.

Once you complete a transfer, your line is immediately freed and you return to the "Ready for Calls" state.

Creating Call Logs in the SoftPhone

User Permissions Needed	
To create a call log:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

Every external call that you make or receive with a SoftPhone automatically generates a call log activity record. You can view these call logs in the Activity History related list of any Salesforce record that is associated with the call or by running a report. Automatically generated call log records include values for:

- The call center user who received or initiated the call
- The phone number of the contact who called or who was called by the call center user
- The date on which the call took place
- The duration of the call, in seconds

- Whether the call was inbound or outbound
- The call center system's unique identifier for the call

You can associate up to two records and add comments to a call log while the call is underway. To do so:

1. Associate up to two the records with the call log:
   - When you view or create a contact, lead, or person account, a `Name` drop-down list appears in the call log. Use this list to select a single contact, lead, or person account record to associate with the call.
   - When you view or create any other type of Salesforce record, a `Related to` drop-down list appears in the call log. Use this list to select a single record of any other type to associate with the call.

   Note: Custom object records can only be associated with a call log if the custom object tracks activities. See "Defining Custom Objects" in the Salesforce online help.

   By default, the most recently viewed records are selected in the `Name` and `Related to` lists unless you manually choose a different record. The records that you choose in these lists will include the call log in their Activity History related lists once the call ends. These records are also displayed with the call if it is transferred to or conferenced with another Call Center Edition user.
2. In the `Comments` field, add information about what happened during the call.

After the call ends, the call log is automatically saved as a completed task. You can quickly access the saved call logs for calls that were just completed by expanding the Last X Calls section of the SoftPhone. Up to three of your last calls are displayed in this list with your most recent call displayed first:

- To view a saved call log, click **Call**.
- To view a record that was associated with a call log, click the name of the record.

To view a list of all calls that you've made or received in the past day, click **My Calls Today**. This link opens the My Calls Today report in the Reports tab.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Wrapping Up a Call Using the SoftPhone

User Permissions Needed	
To end a call:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

When you are ready to end a call:

1. Update the associated call log. For example, if you created a case or viewed a contact while you were on the call, verify that they are selected in one of the `Related To` fields of the log, and use the `Comments` text box to enter any notes about the call.

   Note: Call logs are not created for internal calls.

2. Click **End Call** in the active SoftPhone line or use your physical phone set to hang up. This terminates the call and frees the line..
3. If wrap up codes are not enabled, your call center state is set back to Ready for Calls and the log for your call is automatically saved.
4. If wrap up codes are enabled, your call center state is set to Wrap Up and a set of reason codes are displayed in the SoftPhone. While in this state you cannot receive any incoming calls.
   a. Select the reason code that best represents the outcome of the call.
   b. Optionally make any additional modifications to your call log.
   c. Click **Done**. Your call center state returns to Ready for Calls, and the log for your call is automatically saved.

All saved call logs are placed in the Last N Calls section of the SoftPhone for quick reference. You can review details of these call logs by clicking any of the associated links:

- The `Subject` link (for example, "Call 6/01/2006 12:34 PM") opens the call log details page.
- Either of the `Related To` links opens the detail page for the specified Salesforce record.

Note: Some Call Center Edition features that are described in this help system may not be available with your SoftPhone because of customizations that have been made for your organization. See your administrator for details.

Editing Personal SoftPhone Settings

User Permissions Needed	
To edit personal SoftPhone settings:	Member of a call center

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

You can control personal SoftPhone settings within Salesforce. To change your settings, click **Setup ➤ Call Center Settings ➤ My SoftPhone Settings**.

The following settings are available:

Setting	Description
`Automatically log in to your call center when logging into Salesforce`	Select this option if you want Salesforce to use saved login information to automatically log you in to your SoftPhone.
`If only one record found on incoming call`	Choose one of the following options to specify how a record should be displayed when it is the only one that matches an incoming call: • `Always open the record automatically`. This option displays the record in the main Salesforce window, overwriting whatever was there before. All unsaved changes from your previous record are lost. • `Never open the record automatically`. This option does not display the matching record. To view it you must click on the record's link in the SoftPhone.

Call Center Edition Reports

User Permissions Needed	
To run reports:	"Run Reports" AND "Read" on the records included in report

Note: Call Center Edition is available as part of a limited release program. Contact salesforce.com for more information.

The reports in this folder help you analyze the Call Center Edition phone calls that were handled by you and your team.

- The My Team's Calls This Week gives you information about the calls that were handled by the call center users on your team during the past week, including associated records and the result of each call.
- The My Calls Today report gives you information about the calls that you initiated or received during the past day, including associated records and the result of each call.
- The My Calls This Week report gives you information about the calls that you initiated or received during the past week, including associated records and the result of each call.

Multilingual Solutions

Available in: **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

With Winter '07, you can use multilingual solutions to easily manage your organization's library of solutions in multiple languages. Multilingual solutions helps users effortlessly create and edit solutions in different languages. Users can also report on which solutions have been translated and which solutions are out of date and need to be translated. Once solutions are translated into any of the languages supported by Salesforce, your internal users and customers can find solutions in their preferred language, or all supported languages, via the Solutions tab, Self-Service portal, and public knowledge base.

Implementation Tips

- Run solution reports to locate any existing solutions that are already translated and will need to be converted to translated solutions after you enable multilingual solutions.
- Translate your solution categories before enabling multilingual solutions and then associate solutions with each other. This will help you associate solutions with the correct categories.
- Translate solution categories so that they display in the language of each user on the Solutions tab and in the preferred language of each customer on the Self-Service portal as specified in the customer's Self-Service user information settings.
- After you enable multilingual solutions, associate any existing translated solutions with the appropriate master solutions. You can do this manually using the `Master Solution` lookup field, or you can export a report of existing translated solutions and then import those solutions to associate them with a master solution. For each translated solution you import, include the 15 to 18 character `Solution ID` field of its master solution in a master solution column on your import file. To view the `Solution ID` field for master solutions, run the Translated Solution report.
- Customize solution page layouts to include the `Master Solution Title` field, `Master Solution Details` field, `Out-of-Date` field, and the Translated Solutions related list.
- Make solution edit pages easier for users to translate multilingual solutions by setting the Detail Information section to two columns and placing the `Master Solution Title` and `Master Solution Details` fields alongside each other. Underneath those fields, place the `Solution Title` and `Solution Details` fields alongside each other so that users

can effortlessly compare the master and translated solutions. Note that the `Master Solution Title` and `Master Solution Details` fields display only on the translated solution edit page.
- Set the field-level security settings of the `Master Solution` lookup field to editable for profiles with the "Create" and "Edit" permissions on solutions. When the `Master Solution` lookup field is editable, users can associate translated solutions with master solutions. Field-level security is available in Enterprise, Unlimited, and Developer Editions only.

Best Practices

- Enable multilingual solution search for your Self-Service portal so that customers can automatically view solution search results in their preferred language as specified in their Self-Service user information settings. Customers can also choose to view solution search results in a specific language or all supported languages via a language drop-down list. By default, the Login Page of your Self-Service portal displays in your organization's language.
- Enable multilingual solution search for your public knowledge base so that customers can choose to view solution search results in a specific language or all supported languages via a language drop-down list. By default, the public knowledge base displays in your organization's language.
- Track translated solutions marked `Out of Date` by running the Translated Solutions report.
- Create a custom list view on the Solutions tab so users can see which translated solutions may need translating. Simply enter the following search criteria in the list view: "Out of Date equals True".
- Use the solutions import wizard to import master and translated solutions and associate them with each other.
- Add a long text area custom field to solutions called `Translation Comments` and include it on solution page layouts so that users can add any comments regarding the translation of the solution. Users should include a date with their comments so that other users can see when each comment was added.

About Multilingual Solutions

What are Multilingual Solutions?

The multilingual solutions feature helps you translate solutions and solution categories into the languages supported by Salesforce so that customers and support reps can find answers to inquiries in the language with which they are most comfortable.

Multilingual solutions can lower support costs by:

- Improving customer satisfaction by answering inquiries in the languages preferred by customers
- Deflecting unnecessary incoming calls by providing solutions in languages that are the most useful for customers
- Managing inquiries in multiple languages from one location, anytime and anywhere

Review the following key terms for multilingual solutions:

Master Solution
A solution created in any language supported by Salesforce. A master solution can have zero or more translations associated with it; it cannot be linked to another master solution.

Translated Solution
A solution translated into another language supported by Salesforce and associated with exactly one master solution. A translated solution cannot have the same language as its master solution or any other translated solutions associated with that master solution. A translated solution cannot have other translated solutions associated with it. Translated solutions are represented by the icon on solution detail pages, solution edit pages, solution list views, and solution search results.

You can work with multilingual solutions from the following:

Solutions Tab

When creating a new solution, users can choose a language in which to write the solution from the `Language` picklist field. Once the solution is saved, it becomes a master solution. Users can then create a translated solution by clicking **New** on the Translated Solutions related list of the master solution detail page. When a master solution is modified, users can adjust the statuses of its translated solutions to indicate that they may need translating. For more information, see "Setting Multilingual Solution Statuses" in the Salesforce online help.

Cases Tab

When users search for relevant solutions on a case by entering keywords in the Solutions related list and clicking **Find Solution**, search results include solutions in all languages that have matching keywords. Alternatively, if suggested solutions is enabled for cases, users can click **View Suggested Solutions** to find relevant solutions in multiple languages if they share common words with the case. For more information, see "Solving Cases" in the Salesforce online help.

Self-Service Portal

If multilingual solution search is enabled for your Self-Service portal, customers automatically view solution search results in their preferred language as specified in their Self-Service user information settings. Customers can also choose to view solution search results in a specific language or all supported languages via a language drop-down list. By default, the Login Page of your Self-Service portal displays in your organization's language.

Public Knowledge Base

If multilingual solution search is enabled for your public knowledge base, customers can choose to view solution search results in a specific language or all supported languages via a language drop-down list. By default, the public knowledge base displays in your organization's language.

Solution Categories

Users with the "Manage Translation" permission can translate solution categories so that they display in the language of each user on the Solutions tab and in the preferred language of each customer on the Self-Service portal as specified in the customer's Self-Service user information settings. Solution categories are not translated for the public knowledge base.

To translate solution categories, see "Entering Translated Terms" in the Salesforce online help.

Reports

You can track translated solutions marked `Out of Date` by choosing the Translated Solutions report. Running this report also lists the title and details of translated solutions. You can also create a custom report for multilingual solutions using the Master and Translated Solutions report type. For more information, see "Support Reports" in the Salesforce online help.

List Views

You can see which translated solutions are marked `Out of Date` and may need translating by creating a custom list view on the Solutions tab and entering the following search criteria: "Out of Date equals True".

Import

The solutions import wizard includes options to import master and translated solutions and associate them with each other. For more information, see "What Is Imported for Solutions?" in the Salesforce online help.

To learn more about enabling multilingual solutions, see "Enabling Multilingual Solutions" in the Salesforce online help.

Enabling Multilingual Solutions

User Permissions Needed	
To enable multilingual solutions:	"Customize Application"

You can turn on multilingual solutions so users have the ability to translate solutions into multiple languages.

Preparing for Multilingual Solutions

Before you enable multilingual solutions:

- Run solution reports to locate any existing solutions that are already translated and will need to be converted to translated solutions after you enable multilingual solutions.

  When multilingual solutions is enabled for the first time, all existing solutions automatically become master solutions. You can create translated solutions from master solutions by associating a master solution without any translated solutions with a master solution of a different language via the `Master Solution` lookup field.

- Translate any existing solution categories.

  Translated solutions inherit the solution categories of their master solution. We recommend that you translate your solution categories before enabling multilingual solutions and then associate solutions with each other. This will help you associate solutions with the correct categories. For more information on translating solution categories, see "Entering Translated Terms" in the Salesforce online help.

Enabling Multilingual Solutions

To enable multilingual solutions:

1. Click **Setup ➤ Customize ➤ Solutions ➤ Solution Settings**.
2. Click **Edit**.
3. Select `Enable Multilingual Solutions`.

   Optionally, select `Enable Multilingual Solution Search in Self-Service Portal` and `Enable Multilingual Solution Search for Public Knowledge Base` to allow customers to view solution search results in a specific language or all supported languages via a language drop-down list. For more information, see "Customizing Solution Settings" in the Salesforce online help.
4. Click **Save**.
5. Customize solution page layouts to include the `Master Solution Title` field, `Master Solution Details` field, `Out-of-Date` field, and the Translated Solutions related list. The `Language` picklist and `Master Solution` lookup fields are automatically added to solution page layouts when you enable multilingual solutions.

   Tip: You can make solution edit pages easier for users to translate multilingual solutions by setting the Detail Information section to two columns and placing the `Master Solution Title` and `Master Solution Details` fields alongside each other. Underneath those fields, place the `Solution Title` and `Solution Details` fields alongside each other so that users can effortlessly compare the master and translated solutions. Note that the `Master Solution Title` and `Master Solution Details` fields display only on the translated solution edit page.

6. Set the field-level security settings of the `Master Solution` lookup field to editable for profiles with the "Create" and "Edit" permissions on solutions.

   When the `Master Solution` lookup field is editable, users can associate translated solutions with master solutions.

   Field-level security is available in Enterprise, Unlimited, and Developer Editions only.

7. As a best practice, add a long text area custom field to solutions called `Translation Comments` and include it on solution page layouts so that users can add any comments regarding the translation of the solution. Users should include a date with their comments so that other users can see when each comment was added.

Note: You can deselect the `Enable Multilingual Solutions` checkbox at any time, but deselecting it removes all associations between master and translated solutions and automatically disables the `Enable Multilingual Solution Search in Self Service Portal` and `Enable Multilingual Solution Search for Public Knowledge Base` settings. If you select the `Enable Multilingual Solutions` checkbox again, the associations between master and translated solutions are restored.

Rolling Out Multilingual Solutions

After enabling multilingual solutions:

- Associate any existing translated solutions with the appropriate master solutions.

  You can do this manually using the `Master Solution` lookup field, or you can export a report of existing translated solutions and then import those solutions to associate them with a master solution. For each translated solution you import, include the 15 to 18 character `Solution ID` field of its master solution in a master solution column on your import file. To view the `Solution ID` field for master solutions, run the Translated Solution report. To learn more about importing solutions, see "What Is Imported for Solutions?" in the Salesforce online help. If you import solutions by mistake, you can use mass delete to remove them from your organization. See "Deleting Mass Data" in the Salesforce online help.

Customizing Solution Settings

User Permissions Needed	
To change solution settings:	"Customize Application"

To customize solution settings:

1. Click **Setup ➤ Customize ➤ Solutions ➤ Solution Settings**.
2. Click **Edit**.
3. Select `Enable solution browsing` to turn on the ability to browse for and find solutions by category.

   This setting enables solution browsing on the Solutions tab and when solving a case. For information on translating solution categories into multiple languages, see "Entering Translated Terms" in the Salesforce online help.

4. Select `Enable Multilingual Solutions` to turn on the ability for users to translate solutions into multiple languages. For more information, see "What are Multilingual Solutions?" in the Salesforce online help. To further customize your organization for multilingual solutions, see "Enabling Multilingual Solutions" in the Salesforce online help.

   You can deselect the `Enable Multilingual Solutions` checkbox at any time, but deselecting it removes all associations between master and translated solutions and automatically disables the `Enable Multilingual Solution Search in Self Service Portal` and `Enable Multilingual Solution Search for Public Knowledge Base` settings. If you select the `Enable Multilingual Solutions` checkbox again, the associations between master and translated solutions are restored.

5. Select `Enable Multilingual Solution Search in Self-Service Portal` to add a language drop-down list to the Self-Service portal that automatically restricts search results to solutions that match the Self-Service portal user's language. From the language drop-down list, Self-Service portal users can choose whether to search for solutions in a specific language or any language supported by Salesforce.

   Deselecting this checkbox removes the language drop-down list from the Self-Service portal, and search results include solutions in all languages, regardless of the Self-Service portal user's language.

6. Select `Enable Multilingual Solution Search for Public Knowledge Base` to add a language drop-down list to the public knowledge base so that public knowledge base users can choose which language to search for solutions. From the language drop-down list, public knowledge base users can choose whether to search for solutions in a specific language or any language supported by Salesforce.

   Deselecting this checkbox removes the language drop-down list from the public knowledge base, and search results include solutions in all languages.
7. Click **Save**.
8. To enable solution browsing by customers in the public knowledge base or yourSelf-Service portal, see "Enabling the Public Knowledge Base" in the Salesforce online help and "Enabling Self-Service Features and Settings" in the Salesforce online help.

   In addition, you can customize the top-level category accessible by public knowledge base andSelf-Service users. You do not need to modify this setting if you want customers to view all categories and all solutions that are visible in the Self-Service portal or visible in the public knowledge base.

Setting Multilingual Solution Statuses

User Permissions Needed	
To change the status of translated solutions:	"Edit" on solutions

After you modify a master solution, you can adjust the statuses of each translated solution associated with it and notify users to update those translations, if necessary:

1. Choose a status for the translated solution from the `Status` picklist. For example, Draft, Reviewed, or Duplicate. The picklist values available for you to choose from are set by your administrator.
2. Select the `Out of Date` checkbox to indicate that the master solution has been updated and that the translated solution may need translating. The translated solution will be marked `Out of Date` on the Translated Solution related list of the master solution.
3. Select the `Send Notification` checkbox if you want the last active user who created or modified the solution to receive an email notifying them that the master solution has been updated and that the translated solution may need translating.

   The user displayed in the `Notification Recipient` column will receive the email. Email notices are system-generated and cannot be modified. The email notification is in the language of the notification recipient.
4. Click **Save**.

Deleting Solutions

User Permissions Needed	
To delete unpublished solutions:	"Delete" on solutions
To delete published solutions:	"Manage Published Solutions"

To delete a solution, click **Del** next to the solution on the solutions list page, or click **Delete** on the solutions detail page. The **Del** link is displayed only for solution managers, administrators, and users with the "Manage Published Solutions" or "Delete" permission on solutions.

When you delete a solution, all related history and attachments are also deleted. The solution is moved to the Recycle Bin. Associated cases are not deleted with the solution, but the case associations are removed and are not restored if you later undelete the solution.

For organizations with multilingual solutions enabled:

- Deleting a master solution does not delete the translated solutions associated with it. Instead, each translated solution becomes a master solution.
- Deleting a translated solution removes the association with its master solution.
- Undeleting a master or translated solution from the Recycle Bin does not restore its associations with other master or translated solutions. You can manually restore the associations by modifying the `Master Solution` lookup field on the edit page of translated solutions.
- After deleting a translated solution, you can create a new translated solution in the same language. However, you will not be able to undelete the original translated solution from the Recycle Bin until you delete the second translated solution.

Additional Salesforce Enhancements

Account Enhancements

- The `Account Name` field can now contain up to 255 characters.
- The Partners related list on account detail pages can be customized to display your choice of fields.

Account Team Enhancements

- You can now define a default account team that consists of the other users with whom you regularly collaborate on accounts. To set up your default account team, go to the new Default Account Team related list at **Setup ➤ My Personal Information ➤ Personal Information**.
- You can assign each account team member a role such as "project manager" or "senior support representative" to reflect that person's role on the account.
- Depending on your sharing model, you can specify the level of access each account team member will have to the account, the account's opportunities, and the account's cases.
- You have the option to automatically add your default account team to all of your accounts.
- Please note that account teams are not the same as sales teams, although they share the same set of available team member roles. Account teams work together on accounts, while sales teams work together on opportunities

Case Enhancements

Case Assignment Rules

You can now add any standard case contact field to rule entry criteria on case assignment rules. Users with the "Customize Application" permission can create or update rule entries on case assignment rules by clicking **Setup ➤ Customize ➤ Cases ➤ Assignment Rules**.

Case Comment Enhancements

- You can now edit or delete comments that have been added to a case if you are an administrator or have the "Manage All Data" permission.
- You can now send email notification of new or updated case comments to users who are not members of your Self-Service portal. To enable this option, click **Setup ➤ Customize ➤ Cases ➤ Support Settings**.
- In the Cases, Case Lifecycle, Cases with Assets, and Cases with Emails report types, the Case Comment Information section now displays underneath the Case Information section on the Select Columns step of the report wizard.

Case Contact Roles

You can now associate more than one contact with a case via case contact roles. Related contacts appear in the Contact Roles related list on a case, and are associated with a role, such as First Reporter, Account

Manager, or CIO. To email the primary contact and all contact roles on a case, click **Send An Email** on the Contact Roles related list.

Case `Contact Name` and `Account Name` Fields

- Before Winter '07, when you updated a contact's account, the contact's cases automatically moved to the new account. Now, when you update a contact's account, the contact's cases remain associated with the original account unless you change the `Account Name` field on the cases.
- When you update the `Contact Name` field on a case, the `Account Name` field no longer automatically defaults to the account associated with the contact when you save the case. However, you can change the `Account Name` field during subsequent updates. If the contact is a Self-Service user, he or she can only view cases on the Self-Service portal that are associated with the account on their contact record.

Note: Users who do not have permission to view or edit the `Account Name` field on cases are able to do so when they change the contact on a case.

Close Case Page Layout

You can now add the `Account Name` field to the Close Case Layout.

Close Link on the Cases Related List

You can now close a case directly from the Cases related list by clicking the **Cls** link.

Email-to-Case Enhancements

Automatic Field Updates

Now, if an inbound email does not contain the email address of an existing contact, then the `Web Name` field on the case is automatically updated with the name in the `From` field of the email, and the `Web Email` field on the case is automatically updated with the address provided in the inbound email.

Email Thread Options

With Winter '07, you can to choose whether the thread ID should be included in the emails users send from cases. The thread ID is the unique ID of each case email, such as [ref:00DxRtp.500xXFKf:ref]. By default, the thread ID is added to both the subject and body of case emails. To set thread ID options, click **Setup ➤ Customize ➤ Cases ➤ Email-to-Case ➤ Edit**.

Forecast Enhancements

Forecast Summary Reporting on Teams and Inactive Users

Winter '07 allows you to report on forecast summary information for your entire team across any level of the sales hierarchy. You can also retain an accurate view of forecasts and closed deals even for those sales representatives who are no longer employed at your company by keeping inactive users enabled as forecast users.

Forecast Category Details

Drill into the `Forecast Summary` amount to view the list of deals contributing to that amount and the forecast categories to which they belong.

Quota Administration

The Apex API now allows you to mass insert or update quotas for your sales representatives programmatically.

Help & Training Window Enhancements

Winter '07 includes several enhancements to the Help & Training window to make it easier and faster for you to get the assistance you need. Click the **Help & Training** link at the top of any page or the context-sensitive **Help for this Page** link on any page to view these enhancements:

- The Home tab of the Help & Training window is redesigned to provide you with more relevant information. It includes Featured Solutions, a link to the system status at trust.salesforce.com, feeds from the Salesforce blog, and a list of ways to contact salesforce.com Customer Support.
- An **Email Page** link is now available at the top of the window. Click the link to send a URL for the help topic or knowledge base solution to yourself or anyone else.
- The search results in the Help & Training window now include recommended training classes relevant to your search keywords.
- The search functionality of the Help & Training window is improved to give you more accurate and relevant results. Consider these tips when searching for help topics, knowledge base solutions, and training classes:
  - Search returns online help topics, knowledge base solutions, and recommended training classes that include all or any of your keywords. For example, searching for *synchronize Outlook* may return results with just *synchronize*, just *Outlook*, or both keywords in any order. Items that include more of your keywords are listed higher in results, and items that contain your keywords as a phrase or near each other are also listed higher.
  - Use multiple keywords to narrow your search results. For example, *create lead assignment rules* returns more specific results than just *assignment rules*.
  - Search is not case-sensitive. *Mail Merge* is the same as *mail merge*.
  - Search finds variants of your keywords, for example, searching for *creating* finds items containing *create*, *creation*, or *creating*.
  - Commonly used words such as *the*, *about*, *and*, and *not* are ignored.
  - Search wildcards, such as * and ?, and operators, such as AND, OR, and AND NOT, are treated like any other keyword. For example, searching for *outlook AND cases* is treated exactly the same as *outlook cases*.

Lead Enhancements

- The lead `Company` field can now contain up to 255 characters.
- Users with the "Create and Customize Reports" permission can now select options from a `View:` drop-down list on lead history reports to filter data by My Leads, My Teams Leads, User Owned Leads, Queue Owned Leads, and All Leads.

Opportunity and Opportunity Products Enhancements

- The Partners related list on opportunity detail pages can be customized to display your choice of fields.
- You can now add custom links for opportunity products. Navigate to **Setup ➤ Customize ➤ Products ➤ Buttons and Links** to set up custom links for your opportunity products.
- You can now track discounts at the opportunity product level by referencing the `List Price` field on opportunity products in formulas. Simply create a formula: `Discount = ListPrice – UnitPrice` to calculate the discount amount

Forecast Enhancements

- Deactivated users continue to own opportunities and appear in forecasts and territories. When users are deactivated, their opportunity forecast overrides, adjusted total overrides, and manager's choice overrides on subordinates' forecasts are frozen. However, the manager of a deactivated user can apply manager's choice overrides to that user's forecasts. Rollup amounts will be kept current. If a deactivated user is later reactivated, the user can resume normal work as before.
- In the forecasting hierarchy, "forecast user" has been renamed "forecast manager."

Reports

Winter '07 includes the following additional enhancements for reports:

- You can now save the hierarchy level when creating reports.
- The `Owner` field is now available in the Account Owner report lookup.
- All user fields are available for display in the user reports.
- Custom summary formulas can now contain up to 400 characters in length.
- For easier navigation, you are now redirected back to your report after saving it.
- For dashboards, the calculation row limit has been increased to 10000.
- The axis on line and horizontal bar charts now shows fewer, more readable values when the x-axis is a date or picklist value.

Solution Enhancements

Solution Attachments

When adding attachments to solutions, attachments are now restricted by your organization's upload size limit of 5 MB. The previous limit was 1.5 MB.

For security reasons, users are now prohibited from uploading solution attachments with the following file extensions: htm, html, htt, htx, mhtm, mhtml, shtm, shtml, acgi.

Publishing Solutions

With Winter '07, the `Published` checkbox on solutions has been renamed `Visible in Self-Service Portal`. Also, the `Visible in Public Knowledge Base` checkbox is no longer dependent on this field. You can now publish solutions to your public knowledge base without having to publish them to your Self-Service portal.

Solution Search Enhancements

The solution search functionality now utilizes "proximity searching" technology. This means solutions that contain your keywords as a phrase or contain keywords that are near each other are ranked higher in the search results. This enhancement is designed to achieve more accurate and relevant search results when searching for solutions on the Solutions tab, when solving a case, or when using suggested solutions. In all areas of solution search, the search results include solutions that include all or any of your keywords. For example, searching for *synchronize Outlook* may return results with just *synchronize*, just *Outlook*, or both keywords in any order. Items that include more of your keywords are listed higher in results, and items that contain your keywords as a phrase or near each other are also listed higher. In addition, Solution Search can find variants of your search terms, for example, searching for *creating* finds solutions containing *create*, *creation*, or *creating*.

When searching solutions for a case, links now display at the top left-hand corner of solution detail pages to help you return to the page that lists potential solutions. The links that display are:

- **Back to Suggested Solutions List** if you are viewing a solution from the suggested solutions list
- **Back to Solution Search Results** if you are viewing a solution from the solution search results list
- **Back to List: Solutions** if you are viewing a solution from a solution list view

Note: These links do not display in the Self-Service portal.

Solution Subject and Description Merge Field

You can now add the content of a solution's `Solution Title` and `Solution Detail` fields to a text email template using a single merge field. This means that a generated email with more than one solution can display each solution title with its corresponding details.

You can use this field on the Edit Text Email Template page, accessed by clicking **Setup ➤ Customize ➤ Communication Templates ➤ Email Templates**, and choosing `Case Fields` from the `Select Field Type` drop-down list, and then selecting `Solution Subject and Description` from the

`Select Field` drop-down list. Alternatively, you can enter the following merge field value directly into your email template text: `{!Solution.Subject_and_Description}`.

Field History Tracking Enhancements

- Users who can view the History related list can now only see the history data on the tracked fields that are visible to them in their page layouts or via field-level security. For more information, see "Setting Field-Level Security" in the Salesforce online help.

APEX

Embedded Mash-Ups

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

Build a composite user interface by integrating content and applications using different sources. A composite user interface provides a seamless user experience that increases user productivity and reduces the cost of Web page development. Key capabilities of a composite user interface include:

- Custom s-controls on record detail pages

  Display custom HTML and JavaScript content, or content from an external URL "inline" with the standard Salesforce page content.

- Custom s-controls in dashboards

  Create "mashboards" by integrating third-party analytics using s-controls in dashboards

- Custom buttons and links

  Add custom buttons on any list view, detail page, or related list, and promote them to the button bar to make them easy to find. In list views or related lists, the buttons can invoke actions on selected records or add new records to the list. Among other things, custom buttons and links allow you to display a custom user interface within the current page, minus the header and sidebar. They also support execution of inline JavaScript which can be used with the Salesforce AJAX toolkit to create new levels of interactivity in the user interface.

- Overrides of standard buttons

  Override the behavior of standard buttons on any object to inject your own custom user interface into Salesforce. This affects the entire organization, essentially replacing the standard action of the button with an instruction to render a specific custom s-control. Standard buttons can also be removed from any object's list view, detail page, or related list.

- Custom s-control developer enhancements

  Use existing formula functions to do server-side calculations and evaluations before rendering your content. Leverage new advanced functions and global variables to generate client-side JavaScript.

  Locate all s-control references on the "Where is this used?" page.

  Create up to 2000 s-controls depending on edition. For the number of s-controls allowed in your edition, see "App Setup Limits" in the Salesforce online help. If you have previously created more s-controls than are allowed for your edition, those s-controls will still be available.

In addition, you can now add custom links for opportunity products, tasks, and events.

Implementation Tips

- Custom buttons display at the top and bottom of the detail page to the right of all standard buttons.
- You can include s-controls in any field section on your page layout to display the s-control content "inline" without requiring users to click a button or link to see it. Simply edit the page layout, choose the s-control, and drag it to any section on the page layout.
- If your custom link references a URL, create a custom s-control that references that URL so you can include the s-control directly on your page layout.

- Custom buttons are not distinguished from standard buttons in any graphical way. However, you can recognize them by their location on the right of all standard buttons.
- If the button bar gets too wide, the browser displays a horizontal scroll bar.
- The View standard button refers to all of the links in Salesforce that display the detail page for a record. Overriding the view standard button reroutes all of these links.
- Custom buttons are available for activities under the individual setup links for tasks and events. To add a custom button to an activity list view, first create a custom list button in tasks or events. Next, add it to your activity list view layout. To override a button that applies to both tasks and events, click **Setup ➤ Customize ➤ Activities ➤ Activity Buttons**.
- Custom buttons are not available in Web-to-Lead or Web-to-Case.
- Buttons on search results, lookup dialogs, and tabs, cannot be changed. However, you can change the buttons on list view layouts under search layouts.
- Buttons on reports cannot be changed.
- Some standard buttons can be overridden, but none can be relocated on the detail page or relabeled.
- If your organization uses person accounts, your person account records use any standard button overrides or custom buttons and links you have made for accounts. Your person account records also use any overrides for the **View Self-Service** and **Enable Self-Service** buttons you have made for contacts. Use the person account page layouts to edit any custom links or detail page buttons for person account records. To customize the list view layouts for person accounts, edit the account list view layout where you access account search layouts.
- If your organization uses the console, list buttons are available in the Mass Action drop-down list. List buttons will not display in the mini page layouts. Overrides for the Edit and View buttons for an object do not affect the Edit and View buttons in the mini page layouts. Pages that display due to overrides or custom buttons and links display in the console without the header or sidebar.
- If you get an error message when overriding a button that appears in a list, try calling the s-control using the "URLFOR" in the Salesforce online help function.
- When creating custom buttons, be mindful of any validation rules your organization has for records on that object. For example, a custom list button that changes case status may conflict with a case validation rule. In this scenario, Salesforce displays the error message for the validation rule when users click the custom button.

Best Practices

Use the following best practices when building s-controls:

- If you create a URL s-control, do not select **Show Section Heading on Detail Page** in the page layout section where you put the s-control. This option in conjunction with collapsible sections causes some problems in certain browsers.
- Use global variables to access special merge fields for components like custom buttons, links, and s-controls. For example, the $Request global variable allows you to access query parameters inside a snippet, s-control, or custom button.
- Use the {!$Organization.UISkin} merge field in your s-control to retrieve the User Interface Theme that the organization has selected. The "Theme1" value for this merge field represents the Salesforce Classic theme and "Theme2" represents the Salesforce theme. To view this merge field in an example, see "Useful S-Controls" in the Salesforce online help.
- S-controls use the {! and } characters (previously used to surround merge fields in formulas) to enclose an expression, which can include one or more merge fields, functions, or global variables.
- When overriding an action, use the *`no override`* argument to prevent a recursion, indicated by empty frames on the page. For example, the following s-control overrides the case close action:

```
<html>
<head>
<script src="/soap/ajax/8.0/connection.js">
</script>
<script>
function init()
{
var queryResult = sforce.connection.query("Select count() from CaseSolution Where CaseId
 = '{!Case.Id}'");
var size = queryResult.size;
```

```
if (size > 0) {
//go to the standard case close page without invoking the override
window.parent.location.href = "{!URLFOR($Action.Case.CloseCase, Case.Id,
[retURL=URLFOR($Action.Case.View, Case.Id)], true)}"
}
else
{
alert("Case must contain at least one solution before it can be closed.");
//go to the standard case detail page
this.parent.location.href = "{!URLFOR($Action.Case.View, Case.Id)}";
}
}
</script>
</head>
<body onload="init()">
<p> </p>
</body>
</html>
```

See "URLFOR" in the Salesforce online help for more information on this example.

- To insert activity merge fields, select "Event" or "Task" from the `Select Field Type` drop-down list.

Use the following best practices when creating custom buttons:

- Use formula functions in s-controls or custom buttons with caution. Because functions run on the server before your HTML or JavaScript is passed to the browser, they can only evaluate information that exists at that time. Avoid using functions like IF to evaluate conditions that only exist when the code reaches the browser, such as the value of a JavaScript variable that is returned from your code.
- To prevent a user from performing a particular action, such as creating or editing, change the user's permissions rather than hiding the standard button. Hiding a standard button removes it from a page layout but the link is still available and users can navigate to the new or edit page manually.
- Use global variables to access special merge fields for components like custom buttons, links, and s-controls. For example, the $Request global variable allows you to access query parameters inside a snippet, s-control, or custom button.
- To insert activity merge fields, select "Event" or "Task" from the `Select Field Type` drop-down list.

Availability

Custom buttons and links are available on:

- All custom objects
- All standard objects except documents, forecasts, price books, roles, and territories
- All standard related lists except Notes & Attachments, Attachments, HTML Email Status, Account Teams, Contact Roles, Partners, Case Comments, Price Books, Quotas, Personal Groups, Login History, Approval History, Lead History, and Solutions
- Custom links, but not custom buttons, are available on users and custom home pages

Setting Up a Composite User Interface

About S-Controls

Use s-controls to add your own functionality to your Salesforce organization. Whether you are integrating a hosted application of your own or are extending your current Salesforce user interface, use s-controls to store your code or refer to code elsewhere.

S-controls are components that you set up and define in Salesforce to store your custom code. Use s-controls to create and display your custom data forms within Salesforce using components like custom links, web tabs, or custom buttons. For

example, you can define a custom s-control containing HTML or JavaScript and address merge fields to display a map of a contact's address.

An s-control can contain any type of content that displays or runs in a browser. For example, the content of an s-control can be a Java applet, an ActiveX control, an Excel file, or a custom HTML web form. S-controls have the following attributes:

Attribute Name	Description
`Label`	The text that displays on page layouts for embedded s-controls.
`S-Control Name`	The unique name for the s-control. It must contain alphanumeric characters only and begin with a letter.
`Type`	Determines how you plan to use the s-control: **HTML** Select this option if you want to enter the content for your s-control in the `Content` area. **URL** Select this option if you want to enter the link or URL of an external website in the `Content` area. **Snippet** Snippets are s-controls that are designed to be included in other s-controls. Select this option if you want to enter the content for your s-control snippet in the `Content` area.
`Description`	Text that describes the s-control. This only displays to administrators.

`Content`	Enter the content or source for your s-control. You can enter up to 1 million characters in this field. The HTML code defines exactly how your users should view the custom s-control.
	• To pass specific Salesforce data, choose the data 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. Use the examples in "Operators and Functions" in the Salesforce online help.
	• To insert a function, double-click its name in the list, or select it and click **Insert Selected Function**. To filter the list of functions, choose a category from the `Functions` drop-down list. Select a function and click **Help on this function** to view a description and examples of formulas using that function.
	• To reference a file that you uploaded in the `Filename` field as part of the custom s-control, select "Custom S-Control" from the `Select Field Type` drop-down list, and choose "Custom S-Control URL" to get the merge field for it. For a Java Applet, you can also use the {!Scontrol_JavaCodebase} merge field and the {!Scontrol_JavaArchive} merge field.
	• To insert activity merge fields, select "Event" or "Task" from the `Select Field Type` drop-down list.
	 Tip: Internet standards require special encoding for URLs. Salesforce automatically encodes the text from any merge field you insert into a link. Encode any additional text in your link manually. For example, to generate the following URL:
	`http://www.google.com/search?q={!user.name} Steve Mark 50%`
	Use this content:
	`http://www.google.com/search?q={!user.name}+Steve+Mark+50%25`

Attribute Name	Description
`Filename`	Upload a file to display when you add this custom s-control to a custom link. The file can contain a Java applet, Active-X control, or any other type of content you want. This option only applies to HTML s-controls.
`Prebuild In Page`	This option is a hint that tells Salesforce that this s-control should be cached to improve performance, if possible. This option only applies to HTML s-controls.
`Encoding`	The default encoding setting is Unicode (UTF-8). Change it if you are passing information to a URL that requires data in a different format. This option is available when you select "URL" for the `Type`.

S-Control Terminology

The following terminology is used for custom s-controls in Salesforce:

Advanced Functions
Advanced functions are formula functions designed for use in custom buttons, links, and s-controls. For example, the INCLUDE advanced function returns the content from an s-control snippet. For more details on advanced functions, see "Operators and Functions" in the Salesforce online help.

Global Variables
Global variables are special merge fields that you can use to reference data in your organization. For more information, see "Understanding Global Variables in Custom S-Controls" in the Salesforce online help.

S-Controls
S-controls are components that you set up and define in Salesforce to store your custom code. Use s-controls to create and display your custom data forms within Salesforce using components like custom links, web tabs, or custom buttons. For example, you can define a custom s-control containing HTML or JavaScript and address merge fields to display a map of a contact's address.

Snippet
Snippets are s-controls that are designed to be included in other s-controls. Similar to a helper method that is used by other methods in a piece of code, a snippet allows you to maintain a single copy of HTML or JavaScript that you can reuse in multiple s-controls.

Defining Custom S-Controls

User Permissions Needed	
To create, edit, and delete custom s-controls:	"Customize Application"

The custom s-control library is a place where you can store and upload content for use in many areas within Salesforce such as: custom links, web tabs, custom buttons, and dashboards. S-controls provide a flexible, open means of extending the Salesforce user interface, including the ability to create and display your own custom data forms.

An s-control can contain any type of content that you can display or run in a browser, for example, a Java applet, an ActiveX control, an Excel file, or a custom HTML web form.

To define an s-control:

1. Click **Setup ➤ Build ➤ Custom S-Controls**.
2. Click **New Custom S-Control**, or click **Edit** to change an existing custom s-control.
3. Enter the following attributes:

Attribute Name	Description
`Label`	The text that displays on page layouts for embedded s-controls.
`S-Control Name`	The unique name for the s-control. It must contain alphanumeric characters only and begin with a letter.
`Type`	Determines how you plan to use the s-control: **HTML** Select this option if you want to enter the content for your s-control in the `Content` area. **URL** Select this option if you want to enter the link or URL of an external website in the `Content` area. **Snippet** Snippets are s-controls that are designed to be included in other s-controls. Select this option if you want to enter the content for your s-control snippet in the `Content` area.
`Description`	Text that describes the s-control. This only displays to administrators.

`Content`	Enter the content or source for your s-control. You can enter up to 1 million characters in this field. The HTML code defines exactly how your users should view the custom s-control.
	• To pass specific Salesforce data, choose the data 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. Use the examples in "Operators and Functions" in the Salesforce online help.
	• To insert a function, double-click its name in the list, or select it and click **Insert Selected Function**. To filter the list of functions, choose a category from the `Functions` drop-down list. Select a function and click **Help on this function** to view a description and examples of formulas using that function.
	• To reference a file that you uploaded in the `Filename` field as part of the custom s-control, select "Custom S-Control" from the `Select Field Type` drop-down list, and choose "Custom S-Control URL" to get the merge field for it. For a Java Applet, you can also use the {!Scontrol_JavaCodebase} merge field and the {!Scontrol_JavaArchive} merge field.
	• To insert activity merge fields, select "Event" or "Task" from the `Select Field Type` drop-down list.
	 Tip: Internet standards require special encoding for URLs. Salesforce automatically encodes the text from any merge field you insert into a link. Encode any additional text in your link manually. For example, to generate the following URL:
	`http://www.google.com/search?q={!user.name} Steve Mark 50%`
	Use this content:
	`http://www.google.com/search?q={!user.name}+Steve+Mark+50%25`

Attribute Name	Description
`Filename`	Upload a file to display when you add this custom s-control to a custom link. The file can contain a Java applet, Active-X control, or any other type of content you want. This option only applies to HTML s-controls.
`Prebuild In Page`	This option is a hint that tells Salesforce that this s-control should be cached to improve performance, if possible. This option only applies to HTML s-controls.
`Encoding`	The default encoding setting is Unicode (UTF-8). Change it if you are passing information to a URL that requires data in a different format. This option is available when you select "URL" for the `Type`.

4. Optionally, click **Check Syntax** to validate all Salesforce merge fields and functions.
5. Click **Save** when you are finished. Alternatively, click **Quick Save** to save and continue editing.
6. Create a custom button or link to display the custom s-control to your users. See "Defining Custom Buttons and Links" in the Salesforce online help. Alternatively, create a web tab using the custom s-control, add the s-control to a page layout, or add the s-control to a dashboard.

Useful S-Controls

User Permissions Needed	
To create, edit, and delete custom s-controls:	"Customize Application"

Creating Accounts

While Salesforce provides many buttons and options for creating new accounts, you may want to add that ability to a custom object page layout or web tab. Use the following s-control to create a link to the new account page:

```
<html>
<body>
{!LINKTO("Create a New Account", $Action.Account.New,
   $ObjectType.Account)}
</body>
</html>
```

This example uses the $Action global variable to access the new account page in Salesforce.

For more information on using this function, see "LINKTO" in the Salesforce online help.

Including Snippets

Include snippets in your custom s-controls to reuse common code. The following example references a snippet that provides a header for a page that you created to display in a web tab. It displays the page title "My Title." Use the $SControl global variable to call a snippet.

```
<html>
<body>
{! INCLUDE($SControl.Header_Snippet,
[title = "My Title", theme = "modern"])}
</body>
</html>
```

For more information on using this function, see "INCLUDE" in the Salesforce online help.

Overriding the Close Case Page

Validation rules are a useful way of validating data on a record before saving it. However, you may want to validate the data associated with a record. Use an s-control like the one below to ensure that a case is associated with at least one solution before users are allowed to close it:

```
<html>
<head>
<script src="/soap/ajax/8.0/connection.js">
</script>
<script>
function init()
{
var queryResult = sforce.connection.query("Select count() from CaseSolution Where CaseId =
 '{!Case.Id}'");
var size = queryResult.size;
if (size > 0) {
//go to the standard case close page without invoking the override
window.parent.location.href = "{!URLFOR($Action.Case.CloseCase, Case.Id,
[retURL=URLFOR($Action.Case.View, Case.Id)], true)}"
}
else
{
alert("Case must contain at least one solution before it can be closed.");
//go to the standard case detail page
this.parent.location.href = "{!URLFOR($Action.Case.View, Case.Id)}";
}
}
</script>
</head>
<body onload="init()">
<p> </p>
</body>
</html>
```

To implement this functionality, create an s-control with the content above. Then, override the close case action using the s-control. The s-control displays a message to users when they click **Close Case** on a case with no associated solutions. If the case is associated with at least one solution, the standard close case page displays as usual. This override does not apply to records updated using the API.

For more information on using this function, see "URLFOR" in the Salesforce online help.

Understanding Global Variables in Custom S-Controls

User Permissions Needed	
To create, edit, and delete custom s-controls:	"Customize Application"

S-controls allow you to use special merge fields to reference the data in your organization. Use the following global variables when choosing a merge field type to add to your s-control:

$Action

Description:	A global merge field type to use when referencing standard Salesforce actions such as creating new accounts, editing accounts, and deleting accounts. Use action merge fields in LINKTO and URLFOR functions to reference the action selected.

Use:	1. Select the field type: $Action. 2. Insert a merge field, such as $Action.Account.New.

S-Control Example:	The s-control below references the standard action for creating new accounts in the $Action.Account.New merge field.
	`<html>`
	`<body>`
	`{!LINKTO("Create a New Account",`
	`$Action.Account.New,`
	`$ObjectType.Account)}`
	`</body>`
	`</html>`

Tips:	• This global variable is only available for custom buttons, links, and s-controls.

$ObjectType

Description:	A global merge field type to use when referencing standard or custom objects such as accounts, cases, or opportunities. Use object type merge fields in LINKTO, GETRECORDIDS, and URLFOR functions to reference a specific type of data.
Use:	1. Select the field type: $ObjectType. 2. Select an object to insert a merge field representing that object, such as $ObjectType.Case.

Custom Button Example:	The custom list button below references the cases standard object in the $ObjectType.Case merge field.
	`{!REQUIRESCRIPT("/soap/ajax/8.0/connection.js")}`
	
	`var records =`
	`{!GETRECORDIDS($ObjectType.Case)};`
	`var newRecords = [];`
	
	`if (records[0] == null)`
	`{`
	`alert("Please select at least one row")`
	`}`
	`else`
	`{`
	`for (var n in records) {`
	`var c = new sforce.SObject("Case");`
	`c.id = records[n];`
	`c.Status = "New";`
	`newRecords.push(c);`
	`}`
	
	`result =`
	`sforce.connection.update(newRecords);`
	
	`window.location.reload();`
	`}`

Tips:	• This global variable is only available for custom buttons, links, and s-controls.

$Request

Description:	A global merge field to use when referencing a query parameter by name that returns a value.
Use:	Add $Request manually to your s-control.

S-Control Example:	The snippet below, named Title_Snippet, requires two input parameters: *titleTheme* and *titleText*. You can reuse it in many s-controls to provide page title and theme in your HTML.
	
	`<h2 class="{!$Request.titleTheme}.title"> {!$Request.titleText}</h2>`
	
	The s-control below calls this snippet using the INCLUDE function, sending it the parameters for both the title and theme of the HTML page it creates.
	
	`<html> <head> </head> <body> {! INCLUDE($SControl.Title_Snippet, [titleTheme = "modern", titleText = "My Sample Title"]) }`
	
	`... Insert your page specific content here ...`
	
	`</body> </html>`

Tips:	• This global variable is only available for custom buttons, links, and s-controls.

$SControl

Description:	A global merge field type to use when referencing an existing custom s-control by name. Use s-control merge fields in LINKTO, INCLUDE, and URLFOR functions to reference one of your custom s-controls.
Use:	1. Select the field type: $SControl. 2. Select an s-control to insert a merge field representing that s-control, such as $Scontrol.Header_Snippet.

S-Control Example:	The s-control below references the snippet in the $Scontrol.Header_Snippet merge field:
	`<html>`
	`<body>`
	`{! INCLUDE($SControl.Header_Snippet,`
	`[title = "My Title", theme = "modern"])}`
	`</body>`
	`</html>`

Tips:	• The drop-down list for `Insert Merge Field` lists all your custom s-controls except snippets. Although snippets are s-controls, they behave differently. For example, you cannot reference a snippet from a URLFOR function directly; snippets are not available when creating a custom button or link that has a `Content Source` of "Custom S-Control;" and you cannot add snippets to your page layouts. To insert a snippet in your s-control, use the `Insert Snippet` drop-down button. • This global variable is only available for custom buttons, links, and s-controls.

Setting Custom Buttons and Links

User Permissions Needed	
To create or change custom buttons and links:	"Customize Application"

Create custom buttons and links to integrate Salesforce data with external URLs, applications, your company's intranet, or other back-end office systems.

Custom links can link to:

- An external URL, such as www.google.com or your company's intranet
- A custom s-control in the custom s-control library, such as a Java applet or Active-X control

Custom buttons can:

- Connect users to external applications, such as a web page that displays a map to a contact's address
- Run an s-control from the s-control library, such as an s-control that escalates a case from the case detail page
- Launch custom links

For both custom links and buttons, you can choose the display window properties that determine how the target of a link or button is displayed to your users. Custom links and s-controls can include Salesforce fields as tokens within the URL or custom s-control. For example, you could include an account name in a URL that searches Yahoo: `http://search.yahoo.com/bin/search?p={!Account_Name}`. In addition, s-controls can include operators and functions.

Defining Custom Buttons and Links

User Permissions Needed	
To create or change custom buttons or links:	"Customize Application"

Before creating a custom button or link, determine what action you want to occur when a user clicks it. Consider s-controls if you want the button or link to run a Java applet, HTML page, or other code.

To define custom buttons and links:

1. Select **Setup ➤ Customize**, select the appropriate tab or users link, and choose **Buttons and Links**. Custom buttons are not available on the user object or custom home pages.

   Custom buttons and links are available for activities under the individual setup links for tasks and events. However, you can override a button that applies to both tasks and events by clicking **Setup ➤ Customize ➤ Activities ➤ Activity Buttons**.

   For custom objects, click **Setup ➤ Build ➤ Custom Objects**, and select one of the custom objects in the list.
2. Click **New** from the Custom Buttons and Links section.
3. Enter the following attributes:

Attribute Name	Description
`Label`	The text that displays on user pages for the custom button or link.
`Name`	The unique name for the button or link used when referenced from a merge field. It must contain alphanumeric characters only and begin with a letter.
`Description`	Text that distinguishes the button or link from others. This displays only to administrators when setting up buttons and links.
`Display Type`	Determines where the button or link is available on page layouts: **Detail Page Link** Select this option if you want to add the link to the Custom Links section of your page layouts. **Detail Page Button** Select this option if you want to add the custom button to a record's detail page. You can only add detail page buttons to the Button Section of a page layout. **List Button** Select this option if you want to add the custom button to a list view or related list. You can only add list buttons to the Related List Section of a page layout or the List View layout of a search layout.
`Behavior`	Choose the outcome of clicking the button or link. When applicable, some settings have default values. For example, if you choose "Display in new window," the default height of a new window is 600 pixels. To change these settings, see "Editing Window Open Properties" in the Salesforce online help.
`Content Source`	Choose whether to use a URL, s-control, or JavaScript action as the content of the button or link. To use an s-control, choose "Custom S-Control," and select the s-control from the drop-down list. To use a URL, select "URL," and enter the link below in the text area box

Attribute Name	Description
	exactly as it would appear in the address bar of a web browser. To execute JavaScript code when the button or link is activated, select "OnClick JavaScript," and enter the code in the text area box below.

`Content`	Enter the content of the button or link for buttons and links of type URL or OnClick JavaScript:
	• To pass specific Salesforce data, choose the data 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. Use the examples in "Operators and Functions" in the Salesforce online help.
	• To insert a function, double-click its name in the list, or select it and click **Insert Selected Function**. To filter the list of functions, choose a category from the `Functions` drop-down list. Select a function and click **Help on this function** to view a description and examples of formulas using that function.
	• To insert activity merge fields, select "Event" or "Task" from the `Select Field Type` drop-down list.
	 Tip: Internet standards require special encoding for URLs. Salesforce automatically encodes the text from any merge field you insert into a link. Encode any additional text in your link manually. For example, to generate the following URL:
	`http://www.google.com/search?q={!user.name} Steve Mark 50%`
	Use this content:
	`http://www.google.com/search?q={!user.name}+Steve+Mark+50%25`

`Link Encoding`	Encoding setting that defaults to Unicode (UTF-8). Change the default encoding setting if the target of a link requires data in a different format. This is available if your **Content Source** is URL.

4. Optionally, click **Check Syntax** to validate all Salesforce merge fields and functions.
5. Click **Save** when you are finished.

   Click **Quick Save** to save and continue editing.

   Click **Preview** to view the URL specified.

   Click **Cancel** to quit without saving your content.
6. "Edit the page layout" in the Salesforce online help for the appropriate tab to display the new button or link.

   If you add a custom link for users, it is automatically added to the Custom Links section of the user detail page. Detail page buttons can only be added to the Button Section of a page layout.

Note: The Link URL can be up to 3000 bytes. When data is substituted for the tokens in the URL, the link may exceed 3000 bytes. Your browser may enforce additional limits for the maximum URL length.

Editing Window Open Properties

User Permissions Needed	
To edit custom button or link properties:	"Customize Application"

Custom buttons and links can open in different types of windows. If you have selected a custom button or link to open in a popup window, set the window properties. If you leave the window properties blank, the custom button or link will use the default settings of the user's browser.

To edit the window open properties:

1. Select the custom button or link by clicking **Setup ➤ Customize**, selecting the appropriate tab or users link, clicking **Buttons and Links**, and selecting the button or link name. Custom buttons are not available on the user object.

   For custom objects, click **Setup ➤ Build ➤ Custom Objects**, and select one of the custom objects in the list.
2. Click **Window Open Properties**.
3. Edit the following properties:

Window Property	Description
`Width`	The width (in pixels) of the popup.
`Height`	The height (in pixels) of the popup.
`Window Position`	The location on the screen where the popup should open.
`Resizeable`	Allow users to resize the popup window.
`Show Address Bar`	Show the browser's address bar which contains the URL.
`Show Scrollbars`	Show browser scrollbars for the popup.
`Show Toolbars`	Show the browser toolbars. Toolbars normally contain navigation buttons like Back, Forward, and Print.
`Show Menu Bar`	Show the browser menus. The menus typically contain option like **File** and **Edit**.
`Show Status Bar`	Show the status bar at the bottom of the browser.

Note: Some properties may not be available depending on the `Behavior` of the custom button or link. For example, if you chose "Execute JavaScript," no window open properties are available.

Overriding Standard Buttons

User Permissions Needed	
To override standard buttons:	"Customize Application"

Salesforce gives you the power to override the action of the standard buttons provided on record detail pages.

Before you override a standard button, review the following considerations:

- You can override a standard button to run an s-control. To learn more about creating s-controls, see "Defining Custom S-Controls" in the Salesforce online help.
- If you override a standard button in Salesforce, that button is still available in Offline Edition or Apex Mobile, but it retains its original behavior.
- You cannot add button overrides to an AppExchange package.
- Only some standard buttons can be overridden. For example, you cannot override the **Save** or **Sharing** buttons, but you can override **New**, **View**, **Edit**, and **Delete** buttons.
- If a button is not available for overrides, you may still be able to hide it on the page layout.
- You can override buttons on the detail page but not the edit page of a record.
- Button overrides affect everywhere that action or behavior is available. For example, overriding the **New** button on an account also overrides the account option in the Create New drop-down list in the sidebar.

To override a standard button or link:

1. Click **Setup ➤ Customize**, select the appropriate activity or tab link, and then click **Buttons and Links**.

   For custom objects, click **Setup ➤ Build ➤ Custom Objects**, and select one of the custom objects in the list.
2. Click **Override** next to the button you want to override in the Standard Buttons and Links section of the page.
3. Select the s-control you want to run when users click the button.
4. Optionally, enter any comments to note the reason for making this change.
5. Click **Save**.

   Button overrides are global throughout Salesforce because overrides control the action behind the button. For example, if you override the **New** button on opportunities, your replacement action takes affect wherever that action is available:

   - The Opportunities tab home page
   - Any Opportunities related lists on other objects such as accounts
   - The Create New drop-down list in the sidebar
   - Any browser bookmarks for this Salesforce page

To reset an override:

1. Click **Setup ➤ Customize**, select the appropriate activity or tab link, and then click **Buttons and Links**.

   For custom objects, click **Setup ➤ Build ➤ Custom Objects**, and select one of the custom objects in the list.
2. Click **Reset** next to the override.
3. Click **OK**.

Useful Custom Buttons

User Permissions Needed	
To create or change custom buttons or links:	"Customize Application"

International Maps

You may have customers in both the United States and United Kingdom and you want to display the appropriate type of Google map for each account based on the country. Create the following custom link on your account detail page to display the appropriate type of map depending on the country:

1. Define a custom link for accounts with the following attributes:

   - `Display Type` is "Detail Page Link"
   - `Behavior` is "Display in new window"

- `Content Source` is "URL"
- Use the following sample code:

```
{!
IF(Account.BillingCountry = "US",
"http://maps.google.com/maps?q="&Account.BillingStreet&
"+"&Account.BillingCity&"+"&Account.BillingState&"+"&Account.BillingCountry,
(IF(Account.BillingCountry = "UK",
"http://maps.google.co.uk/maps?q="&Account.BillingStreet
&"+"&Account.BillingCity&"+"&Account.BillingCountry,
"http://maps.google.com")))
}
```

2. Add the link to your account page layout.

For more information on using this function, see "IF" in the Salesforce online help.

Reopening Cases

Related lists are valuable because they allow users to perform an action on several records at once. Add a custom list button to your cases related lists so that users can reopen several cases on an opportunity at once.

1. Define a custom list button for cases with the following attributes:

- `Behavior` is "Execute JavaScript"
- `Content` Source is "OnClick Java Script"
- Use the following sample code:

```
{!REQUIRESCRIPT("/soap/ajax/8.0/connection.js")}

var records = {!GETRECORDIDS($ObjectType.Case)};
var newRecords = [];

if (records[0] == null)
{
alert("Please select at least one row")
}
else
{
for (var n in records) {
var c = new sforce.SObject("Case");
c.id = records[n];
c.Status = "New";
newRecords.push(c);
}

result = sforce.connection.update(newRecords);

window.location.reload();
}
```

2. Add the custom list button to your opportunity page layouts by editing the Cases related list.

Note: Notice the check for `records[0] == null`, which displays a message to users when they do not select at least one record in the list.

Viewing References to Salesforce Components

User Permissions Needed	
To create or change custom buttons or links:	"Customize Application"
To create, edit, and delete custom s-controls:	"Customize Application"

You can view a list of all the areas in Salesforce that reference a component. For example, view the custom links, custom buttons, or page layouts that reference a custom s-control. To do this, click **Where is this used?** from the detail page of the component. Salesforce lists the type of component that references the component and the label for that component. Click any item in the list to view it directly.

User Interface Customization - Renaming Standard Tabs and Fields

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

Integrating Salesforce with existing business processes and legacy systems is critical to any large enterprise. In the Summer '06 release, we provided the means to rename standard tabs. Now with Winter '07, you can also rename standard fields and other labels. Renaming standard fields ensures that standard terminology is consistent across multiple systems and avoids creating duplicate custom fields.

Implementation Tips

- Audit all fields before renaming any standard fields.
- You can rename standard fields on accounts, activities, assets, campaigns, cases, contacts, contracts, documents, events, leads, opportunities, partners, price books, products, solutions, and tasks.
- The renamed labels display on all user pages in Salesforce including Personal Setup. However, all pages in the Setup area use the default, original labels.
- Some standard fields, such as `Created By` and `Last Modified By`, are purposely omitted from renaming because they track system information.
- Outlook Edition and Offline Edition use your new names.

Best Practices

- Plan your renaming carefully so that you do not rename a standard field the same name as one of your custom fields. Begin by auditing your usage of custom fields for duplicate fields so that you do not have fields designed to store the same information. Next, plan a transition before you rename. For example, determine how renamed fields will impact users and how you will broadcast the new labels.
- After renaming tabs, objects, or fields, check the following additional items that may need manual updates:
  - Review all list view names. List view names continue to display the original object name until you change them manually.
  - Check standard report names and descriptions for the objects you renamed. If standard report names contain the old name, update them accordingly.
  - Update the titles and descriptions of any email templates that contain the original object or field name.
  - Manually change any other items you customized with the standard object or field name. For example, custom fields, page layouts, and record types may contain the original tab or field name.

- If you have renamed tabs, objects, or fields, you can also replace the Salesforce online help with another URL. Users can view this URL whenever they click on any context-sensitive help link on an end-user page or within Personal Setup. After you replace the help, the **Help & Training** link at the very top of every page and all Administration Setup pages will continue to display Salesforce online help. For instructions on replacing the online help, see "Replacing Salesforce Online Help" in the Salesforce online help.

About Renaming Standard Tabs and Fields

Renaming Tab and Field Labels

User Permissions Needed	
To rename tab and field labels:	"Customize Application"
To reset renamed tabs:	"Customize Application"

You can change the display labels of standard tabs, objects, fields, and other related user interface labels so they better reflect your organization's business requirements. When you rename a label, such as changing the "Accounts" label to "Companies," the new label appears on all user pages, in Outlook Edition, and in Offline Edition. With rare exception, all pages in the Setup area use the default, original labels.

Developer Edition organizations automatically have renaming enabled; organizations using other Editions can contact salesforce.com to request renaming. Before renaming tabs, objects, fields, and other related labels, review the implementation tips for administrators.

1. Click **Setup ➤ Customize ➤ Tab Names and Labels ➤ Rename Tabs and Labels**.
2. Select your default language from the `Select Language` drop-down list at the top of the page. After you have renamed labels in your default language, repeat this procedure for the additional languages used in your organization.
3. Click **Edit** next to the tab or object you want to rename. Optionally, click **Reset** to change the name of your renamed tab or object to its original name.

   If the tab you want to rename does not appear in the list, it might be a custom tab. To rename a custom tab, rename the custom object you used to create it. See "Defining Custom Objects" in the Salesforce online help.
4. Enter the singular and plural forms of the new tab label. Also, select the `Starts with a vowel sound` checkbox for labels that start with a vowel. This ensures that the proper article (such as "a" or "an") is used. Then click **Next**.

   A renamed tab or object cannot use the name of another standard tab, custom object, or custom tab.
5. Enter the standard field labels and other user interface labels to be used for the selected tab or object. Be sure to enter both a singular and plural form for each label that requires it. Also, select the `Starts with a vowel sound` checkbox for labels that start with a vowel.

   If your organization uses person accounts, see "Renaming Person Account Labels" in the Salesforce online help.

   Note: Some standard fields, such as `Created By` and `Last Modified By`, are purposely omitted from renaming because they track system information.
6. Click **Save**.
7. Repeat this procedure to translate labels into all other languages used in your organization.

Tip: After renaming a tab or object, rename any custom reports, dashboards, profiles, custom fields, and list views that contain the original name. You can modify labels for custom field names, picklist values, record types, page layout sections, solution categories, field validation error messages, custom app names, custom s-control labels, custom buttons and links, and division names using the translation workbench. To rename a standard report, click **Save As** from the report wizard and save it to a report folder designed for your new name.

Renaming Person Account Labels

Person accounts available in: **Enterprise**, **Unlimited**, and **Developer** Editions

If your organization uses person accounts, you can rename the following standard field labels:

Field	Tab	Description
`Business Account`	Accounts	An account that is not a person account because it does not have a record type specific to person accounts. This label is primarily used to clarify the type of accounts you are importing.
`Person Account`	Accounts	A person account. For more information, see below.
`Business Contact`	Contacts	A contact that is associated with a business account. This label is primarily used to clarify the type of accounts you are importing.

When you rename the `Person Account` field label, the renamed label appears in Salesforce as follows:

- As a prefix to differentiate person account fields such as `Birthdate` and `Home Phone` from business account fields. For example, `Person Account: Birthdate` is available as an account column in opportunity reports.
- In the name of the `Is Person Account` field and icon. For example, if you rename the `Person Account` field to "Consumer," then `Is Person Account` becomes `Is Consumer`.

Note: The `Person Account` and `Business Account` field labels are completely independent from actual record type names. To customize person account record types, click **Setup ➤ Customize ➤ Accounts ➤ Person Accounts ➤ Record Types**. To customize business account record types, click **Setup ➤ Customize ➤ Accounts ➤ Record Types**.

Data Model Customization - Sharing on Custom Objects

Available in: **Enterprise**, **Unlimited** and **Developer** Editions

With Winter '07, you can now control sharing for custom objects in three ways:

- Set a default sharing model for each of your custom objects
- Create custom object sharing rules to automatically share records based on your requirements
- Have record owners or administrators manually share individual custom object records with anyone of their choosing

Implementation Tips

- Custom object sharing rules are useful only if you have set the default sharing model to Private or Read Only. To make this change, click **Setup ➤ Security Controls ➤ Sharing Settings**, and then click **Edit** in the Organization-Wide Defaults section.
- To define sharing rules for custom objects, click **Setup ➤ Security Controls ➤ Sharing Settings**, and then click **New** in the Sharing Rules related list for your custom object.

Best Practices

- To share all records in the system with a particular group of users or a specific role, create a sharing rule that sets the `Owned By` field to the "All Internal Users" public group.
- Where possible, use "Roles and Subordinates" over "Roles" to minimize the number of sharing rules that you need to create.

About Custom Object Sharing

By default, the sharing model for custom objects is set to Public Read/Write. Administrators can change this setting by clicking **Setup ➤ Security Controls ➤ Sharing Settings**, and then clicking **Edit** in the Organization-Wide Defaults section.

To edit sharing rules for a custom object, click **Setup ➤ Security Controls ➤ Sharing Settings**, and then click **New** in the Sharing Rules related list for that custom object.

A record owner or administrator can extend sharing of an individual custom object record by clicking **Sharing** on the record's detail page.

Data Model Customization - Queues for Custom Objects

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited** and **Developer** Editions

With Winter '07, you can now use queues to help your organization manage the distribution of custom object records. When a custom object record is created, assign it to a queue so that the users who belong to the queue can access it and take ownership of it as appropriate.

Implementation Tips

- All queues, including those for cases and leads, are now created in a single location under **Setup ➤ Manage Users ➤ Queues**.
- You can create custom object assignment rules by setting up a workflow rule that reassigns ownership of custom object records to a queue with a field update on the record owner field.

Best Practices

- Ease queue management by using the same queue for multiple objects. For example, you can define a single queue that includes both leads and cases. When queue members view the contents of the queue in the Leads tab, they see only leads. When queue members view the contents of the queue in the Cases tab, they see only cases.
- Remove terminated employees from queues to simplify queue member auditing.
- Use the `Owner Alias` field in list views and reports to view which records are owned by which queues.

About Queues for Custom Objects

Setting Up Queues

User Permissions Needed	
To create or change queues:	"Customize Application" AND "Manage Public List Views"

To set up your queues for leads, cases, or custom objects:

1. Click **Setup ➤ Manage Users ➤ Queues**.
2. Click **New**.
3. Enter a name for the queue.
4. Specify an email address to which all notification emails will be sent (for example, when a new record is put in the queue). This can be an individual user or a distribution list set up via your organization's email system.
5. Select `Send Assignment Email to Members` to individually notify all queue members and the specified `Queue Email` address when new records are placed in the queue. If this checkbox is not selected, only the `Queue Email` address is notified.

   Note: If a `Queue Email` address is not specified, individual queue members are always notified of new records, regardless of this checkbox setting.

6. If your organization uses divisions, select the default division for the queue. This determines the division for a record when it is assigned to the queue via assignment rules or a manual change of ownership.

   Note that cases inherit the division of the contact to which they are related, or are assigned to the default global division if no contact is specified.
7. Specify which objects can be placed in the queue. Your choices can include cases, leads, or any custom objects.
8. Specify which users, roles, public groups, territories, or partner users will be members of the queue.

   Only queue members and users above them in the role hierarchy can take ownership of records in that queue, unless the queue includes leads or cases and your organization has set the lead or case organization-wide defaults to Public Read/Write/Transfer.
9. Click **Save**.

Note: When you create a queue, Salesforce automatically creates a corresponding list view. Users can access the queue list view from the Cases, Leads, or custom object tabs.

Only queue members and users above them in the role hierarchy have access to that queue list view, unless the queue includes leads or cases and your organization has set the lead or case organization-wide defaults to Public Read/Write/Transfer.

Once you have defined a queue, you can set up lead or case assignment rules to automatically reassign ownership of leads and cases to the queue. See "Managing Assignment Rules" in the Salesforce online help.

For queues that include custom objects, you can accomplish the same thing by setting up a workflow rule that reassigns ownership of custom object records to a queue with a field update on the record owner field. See "Managing Field Updates" in the Salesforce online help.

Editing and Deleting Queues

User Permissions Needed	
To create or change queues:	"Customize Application" AND "Manage Public List Views"

To edit or delete a queue:

1. Choose **Setup ➤ Manage Users ➤ Queues**.
2. Select the name of the queue.
3. Click **Delete** to remove the queue, or choose **Edit** to make changes.

   You cannot delete a queue if it is used by an assignment rule or has any records in it.

The queue detail page lists all of the members of the queue. Click **Show Members** to view the Expanded Queue Membership related list, which shows you all of the queue members plus any users who have the same access as the queue members because they are higher in the role hierarchy.

Taking Ownership of Custom Objects in a Queue

To take ownership of custom objects in a queue, view the queue list view on the custom object tab, check the box next to one or more records, and then click **Accept**.

Note: You can view and accept records only from queues of which you are a member or if you are higher in the role hierarchy than a queue member. Administrators, and users with the "Modify All Data" permission, can view and take records from any queue.

Data Model Customization - Smart Defaulting of Field Values

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

With default field values, users can now spend less time entering data into Salesforce and more time working with customers. Default values allow them to create records more quickly by auto-populating fields that usually contain the same data. Default field values automatically insert the value of a custom field based on a formula when a new record is created. Administrators can design default values with clicks, not code, reducing implementation time and costs. With Winter '07, you can now:

- Set default field values
- Create intelligent defaults
- Use new formula functions designed especially for default values

Implementation Tips

- If a default value is based on the value of a merge field, Salesforce uses the value of the merge field at the time the default value is executed. If the value of the merge field changes later, the default value is not updated.
- Users can change or remove the default field value on a record.
- Default values should not be assigned to fields that are both required and "unique" in the Salesforce online help, as uniqueness errors may result.
- If you make an activity custom field universally required, you must also provide a default value.
- If an activity custom field is unique, you cannot provide a default value.
- Default field values are different from formula fields in the following ways: they are only executed once, at record creation; they are not read only; and the user can change the value but cannot restore the default field value.
- Since the default value is inserted before users enter any values in the new record, you cannot use the fields on the current record to create a default field value. For example, you cannot create a default field value on a contact that uses the first initial and last name because those values are not available when you click **New** to create a contact record. However, you can use the record type because it is selected before the record edit page displays.
- To apply a different default value for different record types, use the record type as a merge field in a CASE function within the default field value setup.
- Fields that are not visible to the user due to field-level security are still available in the formula for a default field value.
- Offline Edition and Outlook Edition do not display default values. However, Salesforce inserts the default values when a user syncs unless the user entered a value.
- Default field values are not available the Self-Service portal.
- Lead conversion, Web-to-Lead, and Web-to-Case do not execute default field values.

Best Practices

- Define user-specific default field values, such as office location or region, by creating custom fields on the user object.
- Create role or job specific default values using the $UserRole and $Profile merge field types.
- Use default values to provide instructional text and make the field read only on the page layout.

Setting Up Default Field Values

About Default Field Values

Use default field values to make your users more productive by reducing the number of fields they need to fill in manually. Default field values automatically insert the value of a custom field based on a formula when a new record is created.

After you have defined default values:

1. The user chooses to create a new record.
2. Default field value is executed.
3. Salesforce displays the edit page with the default field value pre-populated.
4. The user enters the fields for the new record.
5. The user saves the new record.

The user can change the field's value but the initial default field value is only executed once, during record creation. For example, you can set the default field value on a custom lead field to seven days after the creation date to signify when to contact the lead again. You can change this value later, but you cannot automatically restore the value that was seven days after the creation date.

Set up default field values for the following types of custom fields:

- Checkbox
- Currency
- Date
- Date/Time
- Email
- Number
- Percent
- Phone
- Picklist (use the default option when setting up the picklist)
- Text
- Text Area
- URL

For a description of these types, see "Custom Field Types" in the Salesforce online help.

Defining Default Field Values

User Permissions Needed	
To view default field values:	"View Setup and Configuration"
To define or change default field values:	"Customize Application"

To define a default field value:

1. Begin by creating a custom field; see "Adding Fields" in the Salesforce online help. You can also define a default value for an existing custom field; see "Editing Fields" in the Salesforce online help.
2. Choose the type of field to create and click **Next**. For a list of the types available for default values, see "About Default Field Values" in the Salesforce online help.
3. Enter the attributes for the field.
4. Enter a default value or define a formula to calculate the default value:
   a. Click `Show More...` to view the formula builder.
   b. To pass specific Salesforce data, choose the data type in the `Select Field Type` drop-down list and choose one of the fields listed in the `Insert Field` drop-down list.
   c. To insert an operator, choose the appropriate operator icon from the `Insert Operator` drop-down list. Use the examples in "Operators and Functions" in the Salesforce online help.
   d. Double-click a function to insert it in your formula. For a description of each operator and function, see "Operators and Functions" in the Salesforce online help.
   e. Click **Check Syntax** to check your formula for errors.
5. Click **Next**.
6. In Enterprise, Unlimited, and Developer Editions, set the field-level security to determine whether the field should be visible for specific profiles, and click **Next**.
7. 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.
8. Click **Save** to finish or **Save & New** to create more custom fields.

Note: Default values should not be assigned to fields that are both required and "unique" in the Salesforce online help, as uniqueness errors may result.

Useful Default Field Value Formulas

User Permissions Needed	
To view default field values:	"View Setup and Configuration"
To define or change default field values:	"Customize Application"

Maximum Discount Rate

Your organization my apply different discount rates to opportunities based on the department of the person creating the opportunity. Use the following example to set a default value for a custom field called `Discount Rate` on opportunities.

```
CASE(User.Department, "IT", 0.25, "Field", 0.15, 0)
```

In this example, the formula inserts a discount rate of 25% on any opportunity created by a user in the "IT" department or 15% on any opportunity created by someone in the "Field" department. A zero is applied if the creator does not belong to either of these departments. This is a custom percent field on opportunities that uses the standard user field `Department`.

For more information on using this function, see "CASE" in the Salesforce online help.

Product Language

You may want to associate a product with its language so that your users know the type of documentation or adapter to include. Use the following default value formula to automatically set the language of a product based on the country of the user creating the product. In this example, the default value is "Japanese" if the user's country is "Japan" and "English" if the user's country is "US." If neither is true, the default value "unknown" is inserted into the `Product Language` field.

```
CASE( $User.Country , "Japan", "Japanese", "US", "English","unknown")
```

For more information on using this function, see "CASE" in the Salesforce online help.

Tax Rate

Use this default value formula to set the tax rate of an asset based on the user's city. Create a custom percent field with the following default value:

```
IF($User.City =  "Napa", 0.0750,
 IF($User.City =  "Paso Robles", 0.0725,
  IF($User.City =  "Sutter Creek", 0.0725,
   IF($User.City =  "Los Olivos", 0.0750,
    IF($User.City =  "Livermore", 0.0875, null
    )
   )
  )
 )
)
```

In this example, a tax rate of 8.75% is applied to an asset when the user's address is in the city of Livermore. When none of the cities listed apply, the `Tax Rate` field is empty. You can also use the `Tax Rate` field in formulas to automatically calculate taxable amounts and final sales prices.

Workflow Field Updates and Outbound Messages

Available in: **Enterprise**, **Unlimited**, and **Developer** Editions

Workflow allows your teams to operate more efficiently using automated business processes for your standardized internal procedures. Now, use Salesforce to automatically change the value of a field as a result of a workflow rule or approval process. In addition, you can send a customizable XML message to any desired Web-available listener, eliminating the need to poll for changes.

Other workflow enhancements in Winter '07 include the following:

- Your workflow rules can now include OR filters. When building a filter, click **Advanced Options** to specify your advanced filter conditions, including AND, OR, and NOT conditions between filter rows.
- You can now create up to 300 total rules per object, up to a maximum of 500 rules per organization.
- Workflow rules can now trigger up to 10 workflow actions per action type. Workflow action types include alerts, tasks, field updates, or outbound messages.
- When defining filter criteria, customize your own special value for dates by entering "NEXT <*number*> DAYS" or "LAST <*number*> DAYS" and inserting the number of days. For example, use "NEXT 7 DAYS" to include each day in the following week. Insert any number greater than zero without commas.
- If your workflow rules are set up to fire when a record changes, changing the owner of a record will fire the rule.
- You can now update the `Owner` and `Record Type` fields on a record as a result of a workflow rule.
- You can now use standard and custom fields from the user object when creating workflow rules.
- You can now create workflow rules for contracts, products, and products on opportunities.

Implementation Tips

Use the following implementation tips for field updates:

- Field updates may affect the information in a related list. For example, if a field such as the `Amount` or `Close Date` of an opportunity is set to be updated, it will affect the Stage History related list on opportunities.
- Read-only fields like formula or auto-number fields are not available for field updates.
- The `Language` picklist field on multilingual solutions is not available for field updates.
- Field updates function independent of field-level security. Therefore, a workflow rule can update fields even though they are hidden on the user's page layout.
- The results of a workflow field update cannot trigger other workflow rules.
- The result of a field update is unpredictable when a single workflow rule includes multiple field updates that apply different values to the same field. Multiple field updates within a rule occur in no particular order.
- The same workflow rule does not reevaluate a record that has changed due to a workflow field update. This prevents an infinite loop of updates.
- Field updates occur after case assignment, lead assignment, auto-response, and case escalation rules.
- Field updates occur before workflow alerts, tasks, and outbound messages.
- You can define field updates using the `Amount` field on opportunities but it will only apply to those opportunities that do not have products. Adding products to an opportunity changes the `Amount` field to a read-only field that is automatically calculated and not affected by that field update.
- You can define field updates for the `Status` field on contracts. However, the value of this field may affect the value of the `Status Category` field as well.
- You can define field updates for the `Stage` field on opportunities, but be aware of how this field affects the `Probability` and `Forecast Category` fields. See "Updating Opportunity Stages" in the Salesforce online help for information on the relationship between these fields.

- You can update long text area fields, but the option to insert `A specific value` restricts you to entering up to 255 characters.
- Some fields, such as `Related To` and `Private` fields on activities, are not available for field updates.
- If your organization uses multiple currencies, currency fields are updated using the record's currency. If you choose to update a field based on a formula, any values in your formula are interpreted in the currency of the record.
- Before changing the type of a custom field, make sure that it is not the target of a field update or referenced in a field update formula that would be invalidated by the new type.
- You cannot delete a custom field that is referenced by a field update.
- Field updates are tracked in the History related list if you have set history tracking on those fields.
- Validation rules run before assignment rules, auto-response rules, escalation rules, and workflow rules. However, updates to records based on workflow rules do not trigger validation rules. Therefore, workflow rules can invalidate previously valid fields.
- If a field update references a specific user, you cannot deactivate that user. For example, if your field update is designed to change the owner of an account to Bob Smith, change the field update before deactivating Bob Smith.
- You cannot make a field universally required if it is used by a field update that sets the field to a blank value. For details, see "About Universally Required Fields" in the Salesforce online help.
- Avoid creating a field update for contracts or orders that changes the `Status` field to any value other than Approved.

Use the following implementation tips for outbound messages:

- Outbound messages require a web service consumer endpoint that is accessible over the Internet. To allow communication to this endpoint, deploy the endpoint and open at least one port of your firewall.
- Although HTTPS is used to make the outbound call, no authentication is done.
- The session ID included in an outbound message may expire.

Best Practices

- Use field updates on read-only fields to enforce business processes.
- Replace your polling integrations with outbound messages to reduce API load wherever possible.
- Avoid changing the developer name of a field if you use it in an outbound message.
- Be careful when designing field updates because they do not respect field-level security.
- Design field updates and outbound messages carefully so that they do not create infinite loops.

Setting Up Workflow Field Updates and Outbound Messages

Defining Field Updates

User Permissions Needed	
To define, edit, or delete field updates:	"Customize Application"

Field updates allow you to automatically change the value of a field to a value you specify. To set field updates into action, associate them with a workflow rule or approval process.

Before you begin, review the "Field Update Considerations" in the Salesforce online help. To define field updates:

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Field Updates**.
2. Click **New Field Update**.
3. Configure the field update.

a. Enter a name and description for this field update.
b. Choose the object and the field you want to update.
c. Specify the new field value. The available options depend on the type of field you are updating. You can:

- Choose `A specific value`, and enter the value in the space provided.
- Choose `A blank value (null)` if you want Salesforce to remove any existing value and leave the field blank. This option may not be available for several reasons such as the field is required or a checkbox.
- For record owners, choose the user to whom the record should be assigned. For case, lead, and custom object records, you can also choose a queue for this field. Optionally, select `Notify Assignee` to send an email to the new record owner.
- For checkboxes, choose `True` to select the checkbox and `False` to deselect it.
- For picklists, select a specific value from the drop-down list, or select the value above or below the current value based on the sorting specified in the picklist definition. If you sort values alphabetically, the values above or below may be different for users in other languages.
- Choose `Use a formula to set the new value` to calculate the new value based on an expression, merge fields, or other values.

  a. To pass specific Salesforce data, choose the data type in the `Select Field Type` drop-down list and choose one of the fields listed in the `Insert Field` drop-down list.
  b. To insert an operator, choose the appropriate operator icon from the `Insert Operator` drop-down list. Use the examples in "Operators and Functions" in the Salesforce online help.
  c. Optionally, insert a function from the `Functions` list. Functions are pre-built formulas that you can customize with your input parameters. See "Operators and Functions" in the Salesforce online help for a description of each operator and function.

d. Click **Save**.

Defining Outbound Messages

User Permissions Needed	
To define, edit, or delete outbound messages:	"Customize Application"

Outbound messages send the information you specify to an endpoint you designate. You can set up workflow rules and approval processes to send outbound messages to an endpoint as a means of getting information to an external service.

When you associate an outbound message with a workflow rule or approval process, the outbound message sends the selected information to the associated endpoint URL whenever the workflow rule or approval process is triggered. Once the endpoint URL receives the message, it can take the information from the message and process it, assuming that the Web service has been configured appropriately.

To define outbound messages:

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Outbound Messages**.
2. Click **New Outbound Message**.
3. Choose the object that has the information you want included in the outbound message, and click **Next**.
4. Configure the outbound message.

   a. Enter a name and description for this outbound message.
   b. Enter an endpoint URL for the recipient of the message. Salesforce sends a SOAP message to this endpoint.
   c. Select the Salesforce user to use when sending the message. The chosen user controls data visibility for the message that is sent to the endpoint.

d. Select `Include Session ID` if you want the Salesforce session ID included in the outbound message. Include the session ID in your message if you intend to make API calls and you do not want to include a username and password. Sending a username and password is less secure than sending a session ID.
e. Select the fields you want included in the outbound message and click **Add**.

5. Click **Save**.
6. On the outbound message detail page, click the **Click for WSDL** link to view the WSDL associated with this message.

   The WSDL is bound to the outbound message and contains the instructions about how to reach the endpoint service and what data is sent to it.
7. To set outbound messages into action, associate them with a workflow rule or approval process.

Note: If you do not have these options, your organization does not have outbound messaging enabled. Contact salesforce.com to enable outbound messaging for your organization.

Tracking Outbound Message Delivery Status

User Permissions Needed	
To track outbound messages:	"Customize Application"

Outbound messages send the information you specify to an endpoint you designate. You can set up workflow rules and approval processes to send outbound messages to an endpoint as a means of getting information to an external service.

To track the status of an outbound message, click **Setup ➤ Monitoring ➤ View the Outbound Message Queue**. Alternatively, click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Outbound Messages**, and then click **View Message Delivery Status**. Here you can view the status of your outbound messages including the total number of attempted deliveries. Click any workflow or approval process action ID to view the action that triggered it.

Note: If you do not have these options, your organization does not have outbound messaging enabled. Contact salesforce.com to enable outbound messaging for your organization.

Approval Process Automation

Available in: **Enterprise**, **Unlimited**, and **Developer** Editions

Automate and enforce practically any business process within your organization: sales, service, human resources, or finance. With minimal effort, you can build an automated approval process that increases your employees' productivity while decreasing their workload. With approval process automation in Winter '07, you can:

- Create simple or multiple step approval processes
- Automate anything in your company by creating approval processes for standard and custom objects
- Use the new user field, `Delegated Approver`, for delegation of approval requests
- Build hierarchical relationship fields on users to designate managers or other users that are authorized to approve approval requests

Implementation Tips

- Active approval processes cannot be deleted but they can be deactivated. Before deleting an approval process, make sure it is inactive and that no records have been submitted for approval. If any records have been submitted, delete them and remove them from the Recycle Bin.
- After you activate an approval process, you cannot add, delete, or change the sorting of the steps for that approval process.
- Educate your users on the criteria for each approval process and what each of your approval processes does. Users cannot tell what approval process is triggered when they click **Submit for Approval**.
- Records are locked while in an approval process. Only users with the "Modify All Data" permission can unlock those locked records.
- An error message displays for the user submitting an approval request if the approval request needs to go to the user's direct manager and there is no direct manager for that user.
- An error message displays for the user submitting an approval request if the approval process has a field update that fails field validation rules. This could happen for a field that is not visible on the user's page layout.
- Approval processes that allow the user to select an approver manually also allow the user submitting a request to select himself or herself as the approver.
- When the assigned approver is a queue:
  - Any queue member can approve or reject an approval request that is assigned to the queue.
  - When an approval request is assigned to a queue, the email notification is sent to the email address for the queue. Depending on your queue settings, an email notification is also sent to each queue member.
  - When an approval request is rejected and returned to the previous approver and the previous approver was a queue, the approval request is assigned to the user who approved it, instead of the queue.
  - The Approval History related list displays the queue name in the `Assigned To` column and the actual user who approved or rejected the approval request in the `Actual Approver` column.
  - Delegates of all queue members can approve requests when the process step is configured to allow delegated approvers.

Note: Queues are only available on specific objects. For more information on queues, see "Managing Queues" in the Salesforce online help.

Best Practices

- Test your approval processes in your Salesforce Sandbox before activating it in your Salesforce organization.
- Clone approval processes to create similar processes quickly.
- Any record can potentially go through multiple approval processes during its lifetime. Therefore, the entry criteria for each approval process should be specific enough to ensure it does not go through the same process twice.
- Active approval processes are ordered. For optimum performance, sort your approval processes by the criteria a record must have to be submitted for that approval process. For example, the approval process with the most specific criteria should be sorted before the approval process with the least specific criteria.
- Give users the "Modify All Data" permission if they are responsible for performing mass actions on pending approval requests.
- Delegates should periodically check the new standard report, My Delegated Approval Requests, to get a list of all approval requests they could be responsible for approving.

About Approval Process Automation

What Are Approval Processes?

User Permissions Needed	
To use approvals:	Various user permissions required depending on the action

Your business runs more efficiently with automated processes. For example, you may already have workflow rules that automatically send email alerts or assign tasks based on your internal processes. Approvals take automation one step further, allowing you to specify a sequence of steps that are required to approve a record.

An approval process is an automated process your organization can use to approve records in Salesforce. An approval process specifies the steps necessary for a record to be approved and who must approve it at each step. A step can apply to all records included in the process, or just records that have certain attributes. An approval process also specifies the actions to take when a record is approved, rejected, or first submitted for approval.

For example, your organization may have a two-step process for approving expenses: submitted expenses that are less than $50 are automatically approved, those over $50 must be approved by a manager, and those over $5,000 must also be approved by a Vice President. In this example, your approval process would specify the following:

- If an expense record is submitted for approval, lock the record so that users cannot edit it and change the status to "Submitted."
- If the amount is $50 or less, automatically approve the request.
- If the amount is greater than $50, send an approval request to the direct manager.
- If the amount is greater than $5,000 and the first approval request is approved, send an approval request to the Vice President.
- If all approval requests are approved, change the status to "Approved" and unlock the record.
- If any approval requests are rejected, change the status to "Rejected" and unlock the record.

An approval process includes the following elements:

- A name and description to distinguish it from other approval processes
- Entry criteria if you only want records with certain attributes to be included
- A designated user who can approve requests
- Settings to specify who, if anyone, can change a record once it has been submitted for approval
- Any number of steps that determine the sequence of actions to take when a record matches the criteria. Each step can have up to 40 actions, 10 of each type: email alerts, field updates, tasks, and outbound messages.
- Up to 40 additional actions that occur when a record is initially submitted
- Up to 40 additional actions that occur when a record is approved
- Up to 40 additional actions that occur when a record is rejected

To begin designing your approval processes, see "Getting Started with Approval Processes" in the Salesforce online help.

Getting Started with Approval Processes

User Permissions Needed	
To create approval processes:	"Customize Application"

An approval process is an automated process your organization can use to approve records in Salesforce. An approval process specifies the steps necessary for a record to be approved and who must approve it at each step. A step can apply to all records included in the process, or just records that have certain attributes. An approval process also specifies the actions to take when a record is approved, rejected, or first submitted for approval.

Before you begin creating an approval process, review the "Approval Process Checklist" in the Salesforce online help to prepare for your implementation and determine what wizard to use.

To automate your organization's processes:

1. Create an approval process.
2. Add steps to your approval process.
3. Specify initial submission actions.
4. Specify final approval actions.
5. Specify final rejection actions.
6. If this is the first approval process you are creating:

   - Add the Approval History related list to the appropriate page layout. The Approval History related list lets users submit approval requests and track a record's progress through an approval process from the record detail page. See "Customizing Page Layouts" in the Salesforce online help.
   - Consider adding the Items To Approve related list to your custom home page layouts. It gives users an instant view of the approval requests they need to approve or reject. For instructions on adding this related list to your home page layouts, see "Designing Home Page Layouts" in the Salesforce online help.
   - If you created any custom user fields for your approval process, populate these fields with the appropriate values.

Note: Standard reports for approval requests are included in both the Administrative Reports folder and the Activities Reports folder. See "Administrative Reports" in the Salesforce online help and "Activity Reports" in the Salesforce online help.

Approval Process Checklist

Plan each approval process carefully to ensure a successful implementation. Review the following checklist about preparing the appropriate information before creating your approval process.

- Prepare an approval request email template.
- Determine the approval request sender.
- Determine the assigned approver.
- Determine the delegated approver.
- Decide if your approval process needs a filter.
- Design initial submission actions.
- Decide if users can approve requests from a wireless device.
- Determine if users can edit records that are awaiting approval.
- Decide if records should be auto-approved or rejected.
- Determine how many levels your process has.
- Determine the actions when an approval request is approved or rejected.

What email template do you want to use for approval requests?

The email template you specify on an approval process is used when notifying users that an approval request is assigned to them. Salesforce offers a default email template, which you can modify, or you can create your own. Evaluate the default email template to see if it is appropriate for your approval process. If not, create your own email templates to use for your approval request notifications. Include the appropriate approval process merge fields to link directly to the approval request. For details about using merge fields, see "About Merge Fields" in the Salesforce online help.

Determine who should be the sender of approval requests.

The approval request notifications are automatically sent from the user who submitted the record for approval. You have the option to assign a different return email address to these notifications. Determine what email address to use.

Who will be responsible for approving requests?

Requests can be approved or rejected by any of the following:

- A manually chosen user or queue
- A user or queue specified by the administrator
- A user listed in a custom hierarchy field on the user detail page

Each step in your approval process can assign approval requests using any of these options.
The option to use a custom hierarchy field allows you to assign approval requests to the submitter's manager. To do this, create a custom hierarchical relationship field on users called "Direct Manager" and store each user's manager in that field. Custom hierarchical relationship fields prevent you from selecting a user that directly or indirectly reports to itself.

Should approval requests be delegated to another user for approval?

An approval request can be approved by a designated delegate for the approver. However, you have the ability to disable this option. Determine if you want to allow delegated users to approve requests. Then, for each user, populate the `Delegated Approver` field on the user's detail page.

What records should be included in this process?

Determine what attributes a record must have to be included in your approval process. If necessary, create the custom fields to store this information so that you can use it in your filter criteria. For example, if you want to include expense records from your headquarters office only, create a custom picklist field called `Office Location` that has two options: "HQ" and "Field." Then, your filter criteria for the process would specify that records must have "HQ" in the `Office Location` field to be included.

What should occur when a record is first submitted for approval?

When users submit a record for approval, Salesforce automatically locks the record so that other users cannot change it while it is awaiting approval. Decide if you want other workflow actions to occur when a record is first submitted, such as alerts, tasks, field updates, and outbound messages. These actions belong on your list of Initial Submission Actions.

Should users be able to approve requests from a wireless device?

Determine if you want to require users to log in to Salesforce to approve requests. Alternatively, you can set up your approval process to allow users to approve requests remotely using a wireless browser.

Who can edit records that are awaiting approval?

Records submitted for approval are automatically locked. Users with the "Modify All Data" permission can always unlock a record and edit it. However, you may also specify that the currently assigned approver can edit the record as well.

Should records be automatically approved or rejected based on certain criteria?

You can set filter criteria in the first step of your process that automatically approves or rejects records. For example, all expenses submitted with an `Amount` less than $15 are automatically approved.

How many people need to approve these requests?

An approval process can have several layers of approvals. Determine how many users need to approve requests and in what order.

Should any actions take place when a request is approved or rejected?

You can set up to 40 additional actions to take place when a request is approved or rejected at each step, up to 10 of each of the following types:

Type	Description
Task	Assigns a task to a user you specify. You can specify the `Subject`, `Status`, `Priority`, and `Due Date` of the task.
Email	Uses an email template you specify to send an email to a designated recipient.
Field Update	Changes the value of a selected field. You can specify a value or create a formula for the new value.
Outbound Message	Sends a message to an endpoint you designate. You can also specify user name and the data you want included in the message.

Additionally, you can set up to 40 additional actions to take place when a record has received all necessary approvals or is completely rejected.

Useful Approval Processes

User Permissions Needed	
To create approval processes:	"Customize Application"

Use these samples of common approval processes to help you get started creating your own:

- "PTO Requests" in the Salesforce online help
- "Expense Reports" in the Salesforce online help
- "Discounting Opportunities" in the Salesforce online help
- "Job Candidates" in the Salesforce online help

PTO Requests

Most companies require employees to file a PTO (Paid Time Off) request and have their manager approve it. Here's how to automate a simple one-step PTO request process using Salesforce.

- If you do not yet have a custom object to track your PTO requests, create a custom object and tab called "PTO Requests." See "Defining Custom Objects" in the Salesforce online help and "Defining Custom Tabs" in the Salesforce online help. Add the appropriate fields for your PTO Requests such as `Start Date`, `End Date`, and `Employee Name`.
- Create a custom hierarchical relationship field on the user object called `Direct Manager`. For each user, enter the manager, or user responsible for approving these requests, in this field. See "Creating Custom Fields" in the Salesforce online help.
- Create an email template to notify approvers that an approval request needs to be reviewed. Be sure to include one of the approval process merge fields to take users directly to the approval page. See "Managing Email Templates" in the Salesforce online help.
- Use the jump start wizard to create an approval process and specify the following:
  - Select the PTO Request custom object.
  - Select the email template you created for this approval process.
  - No need to specify a filter criteria if you want each user to submit PTO requests and have them included regardless of their attributes.
  - Choose the `Automatically assign an approver using a custom hierarchy field` option so that the user in the `Direct Manager` field is automatically assigned as the approver.
  - The jump start wizard automatically chooses the record owner as the only person who can submit PTO requests.

- Add the Approval History related list to the PTO Request object page layout. See "Customizing Page Layouts" in the Salesforce online help.
- Consider adding the Items To Approve related list to your custom home pages. It gives users an instant view of the approval requests they need to approve or reject. See "Designing Home Page Layouts" in the Salesforce online help for instructions on adding this component to your home page layouts.
- If available, use your Salesforce Sandbox to test the approval process.
- Activate the approval process.

Expense Reports

If your company requires that employees file expense reports for managers to approve, automate this process in Salesforce. Use this example to create a two-step expense report approval process for all employees in your headquarters office. It specifies that expenses less than $50.00 are automatically approved, those $50 and over require manager approval, and those over $5,000 require additional approval from a VP.

- If you do not yet have a custom object to track your expenses, create a custom object and tab called "Expense Reports." See "Defining Custom Objects" in the Salesforce online help and "Defining Custom Tabs" in the Salesforce online help. Add the appropriate fields such as `Amount`, `Description`, `Status`, `Start Date`, and `End Date`.
- Create a custom hierarchical relationship field on the user object called `Direct Manager`. For each user, enter the manager, or user responsible for approving these requests, in this field. See "Creating Custom Fields" in the Salesforce online help.
- Create an email template to notify approvers that an approval request needs to be reviewed. Be sure to include one of the approval process merge fields to take users directly to the approval page. See "Managing Email Templates" in the Salesforce online help.
- Create a custom field on the user object called `Office Location`. Assign the "HQ" value to users in the headquarters office location.
- Create the approval process and specify the following:
  - Select the Expense Report custom object.
  - The filter criteria for this approval process is "Current User: Office Location equals HQ." Records must meet this criteria before they can be submitted to this approval process.
  - Choose the `Direct Manager` custom field as the next automated approver.
  - Select the email template you created for this approval process.
  - Choose the record owner or any other user who you want to be able to submit expense reports.
  - Create two approval steps:

    Name this step "Step 1: Direct Manager Approval"

    - Use this filter criteria and specify that records not meeting this criteria are automatically approved: "Expense: `Amount` greater or equal 50."
    - Choose `Automatically assign using the custom field selected earlier (Direct Manager)` to send the approval request to the user in the `Direct Manager` field of the user submitting the request.
    - If appropriate, choose `The approver's delegate may also approve this request` if you want to allow the user in the `Delegated Approver` field to approve requests.

    Name this step "Step 2: VP Approval"

    - Use the filter criteria "Expense `Amount` greater or equal 5000."
    - Choose `Let user choose the approver` so that the first approver can select the appropriate VP manually.
    - If appropriate, choose `The approver's delegate may also approve this request` if you want to allow the user in the `Delegated Approver` field to approve requests.
    - Choose `Perform ONLY the rejection actions for this step` so that the request returns to the direct manager for changes if the VP rejects the request.

    - Consider creating the following final approval actions:
        - Define a field update to automatically change the `Status` field to "Approved."
        - Send an approval notification to the user who submitted the expense report.
        - Send an outbound message to your backoffice financial system to print a reimbursement check.

- Add the Approval History related list to the Expense Report object page layout. See "Customizing Page Layouts" in the Salesforce online help.
- Consider adding the Items To Approve related list to your custom home pages. It gives users an instant view of the approval requests they need to approve or reject. See "Designing Home Page Layouts" in the Salesforce online help for instructions on adding this component to your home page layouts.
- If available, use your Salesforce Sandbox to test the approval process.
- Activate the approval process.

Discounting Opportunities

Opportunities that are discounted more than 40% require a CEO approval. Use this example to create a one-step approval process.

- Create an email template to notify approvers that an approval request needs to be reviewed. Be sure to include one of the approval process merge fields to take users directly to the approval page. See "Managing Email Templates" in the Salesforce online help.
- Create a custom percent field on opportunities called `Discount Percent` so that users can enter a percentage discount.
- Create a custom checkbox field on opportunities called `Discount Approved` to indicate if the CEO approved the discount.
- Create the approval process and specify the following:
    - Select the Opportunity object.
    - The filter criteria for this approval process is "`Discount Percent` greater or equal 0.04." Records must meet this criteria before they can be submitted to this approval process.
    - No need to choose a custom field as the next automated approver because you will specify later in the process that the CEO must approve all requests.
    - Select the email template you created for this approval process.
    - Choose the record owner as the only user who can submit a discount request for approval.
    - Create one approval step with no filter criteria because all records submitted will need to be approved or rejected. See "Creating Approval Steps" in the Salesforce online help.
    - Choose `Assign to` and select the name of your CEO.
    - If appropriate, choose `The approver's delegate may also approve this request` if you want to allow the user in the `Delegated Approver` field to approve requests.
    - Consider creating the following final approval actions:
        - Send an approval notification to the user who submitted the discount request.
        - Define a field update to automatically select the opportunity `Discount Approved` checkbox field.

- Add the Approval History related list to the appropriate opportunity page layouts See "Customizing Page Layouts" in the Salesforce online help.
- Consider adding the Items To Approve related list to your custom home pages. It gives users an instant view of the approval requests they need to approve or reject. See "Designing Home Page Layouts" in the Salesforce online help for instructions on adding this component to your home page layouts.
- If available, use your Salesforce Sandbox to test the approval process.
- Activate the approval process.

Job Candidates

When your company interviews candidates for a position, you may have several levels of approval before you can send an offer letter. Use this example to create a three-step approval process that requires approval from multiple levels of management.

- If you do not yet have a custom object to track candidates, create a custom object and tab called "Candidates." See "Defining Custom Objects" in the Salesforce online help and "Defining Custom Tabs" in the Salesforce online help. Add the appropriate fields such as `Salary`, `Offer Extended` (checkbox), and `Date of Hire`.
- Create a custom hierarchical relationship field on the user object called `Direct Manager`. For each user, enter the manager, or user responsible for approving these requests, in this field. See "Creating Custom Fields" in the Salesforce online help.
- Create an email template to notify approvers that an approval request needs to be reviewed. Be sure to include one of the approval process merge fields to take users directly to the approval page. See "Managing Email Templates" in the Salesforce online help.
- Create the approval process using the following specifications:
  - Select the Candidate custom object.
  - No need to enter a filter criteria because you want all submitted offers to be approved.
  - Choose the `Direct Manager` custom field as the next automated approver.
  - Select the email template you created for this approval process.
  - Choose the record owner or any other user that you want to be able to submit offer letters.
  - Create three approval steps:

    Name this step "Step 1: Direct Manager Approval"

    - No filter necessary as you want all records to advance to this step.
    - Choose `Automatically assign using the custom field selected earlier (Direct Manager)` to send the approval request to the user in the `Direct Manager` field of the user submitting the request.
    - If appropriate, choose `The approver's delegate may also approve this request` if you want to allow the user in the `Delegated Approver` field to approve requests.

    Name this step "Step 2: VP Approval"

    - No filter necessary as you want all records to advance to this step.
    - Choose `Let the user choose the approver` to allow the direct manager to select the appropriate VP to approve the request.
    - If appropriate, choose `The approver's delegate may also approve this request` if you want to allow the user in the `Delegated Approver` field to approve requests.
    - Choose `Perform ONLY the rejection actions for this step` so that the request returns to the direct manager for changes if the VP rejects the request.

    Name this step "Step 3: CFO Approval"

    - No filter necessary as you want all records to advance to this step.
    - Choose `Assign to` and select the name of your CFO.
    - If appropriate, choose `The approver's delegate may also approve this request` if you want to allow the user in the `Delegated Approver` field to approve requests.
    - Choose `Perform all rejection actions for this step AND all final rejection actions. (Final Rejection)` so that offer letters rejected by your CFO are completely rejected.

  - Consider creating the following final approval actions:
    - Send an approval notification to the user who submitted the offer letter request.
    - Define a field update to select the `Offer Extended` checkbox field.

    - Consider creating the following final rejection actions:
        - Send a notification to the direct manager that the offer will not be extended.

- Add the Approval History related list to the Candidates object page layout. See "Customizing Page Layouts" in the Salesforce online help.
- Consider adding the Items To Approve related list to your custom home pages. It gives users an instant view of the approval requests they need to approve or reject. See "Designing Home Page Layouts" in the Salesforce online help for instructions on adding this component to your home page layouts.
- If available, use your Salesforce Sandbox to test the approval process.
- Activate the approval process.

Choosing an Approval Process Wizard

Approval processes require planning and preparation. Before you create an approval process, determine which wizard is best for your needs.

Jump Start Wizard

The jump start wizard is useful for simple approval processes with a single step. Use the jump start wizard if you want to create an approval process quickly by allowing Salesforce to automatically choose some default options for you. For a list of the options the jump start wizard chooses automatically, see "Approval Process Jump Start Default Selections" in the Salesforce online help.

To create an approval process using the jump start wizard, see "Using the Approval Process Jump Start Wizard" in the Salesforce online help.

Standard Wizard

The standard wizard is useful for complex approval processes. Use it when you want to fine tune the steps in your approval process. The standard wizard consists of a setup wizard that allows you to define your process and another setup wizard that allows you to define each step in the process.

To create an approval process using the standard wizard, see "Creating Approval Processes" in the Salesforce online help.

Creating Approval Processes

User Permissions Needed	
To create approval processes:	"Customize Application"

An approval process is an automated process your organization can use to approve records in Salesforce. An approval process specifies the steps necessary for a record to be approved and who must approve it at each step. A step can apply to all records included in the process, or just records that have certain attributes. An approval process also specifies the actions to take when a record is approved, rejected, or first submitted for approval.

Before you begin, determine which wizard to use. See "Choosing an Approval Process Wizard" in the Salesforce online help. To create an approval process:

1. Launch the approval process wizard.
2. Specify name and description.
3. Specify filter criteria.
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.

Launch the approval process wizard

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**.
2. Choose the object for the new approval process.
3. Click **Create New Approval Process** and choose **Use Standard Setup Wizard** from the drop-down button. Alternatively, click **Use Jump Start Wizard** if you want to create a basic approval process with default settings. For instructions on using the jump start wizard, see "Using the Approval Process Jump Start Wizard" in the Salesforce online help.

Specify name and description

1. Enter a name for the new approval process.
2. Optionally, enter a description to distinguish this approval process from others.
3. Click **Next**. If you are editing an existing approval process and do not want to make further changes, click **Save** to store your changes.

Specify filter criteria

If only certain types of records should enter this approval process, you must enter filter criteria. For example, if only employees from headquarters should use this approval process to submit expense reports, then you would enter the following filter criteria: "Current User: Office Location equals Headquarters."

1. Enter filter criteria that records must match in order to be included in this approval process. Leave the filter blank if you want all records submitted to be included in the approval process. For information on using filter criteria, see "Entering Filter Criteria" in the Salesforce online help.

   Note: Select a current user field if you want the filter based on the user submitting an approval request.

2. Click **Next**. If you are editing an existing approval process and do not want to make further changes, click **Save** to store your changes.

Specify approver field and record editability

When you define approval steps, you can assign approval requests to different users. One option is to use a custom user field to automatically route these requests. To see some examples of specifying a custom user field as an approver field, see "Useful Approval Processes" in the Salesforce online help.

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.

1. From the `Next Automated Approver Determined By` picklist, select a custom user field if you want Salesforce to automatically assign approval requests to an approver based on the value in the custom user field. For example, you may want approval requests automatically routed to a user's manager as specified in a custom `Direct Manager` user field.

   - To specify a single user to approve all approval requests, leave this field blank. You can select a single user as the approver when creating an approval step.

Caution: Leaving the `Next Automated Approver Determined By` field blank prevents you from automatically assigning approval requests to an approver in any step you create for this approval process.

- To create a new custom hierarchy field that stores the direct manager for each user, click `Create New Field` from this option. For more information, see "Creating Custom Fields" in the Salesforce online help.

Note: Make sure the assigned approver has access to read the records for the approval requests. For example, a user who does not have read access to an Expenses custom object will not be able to view expense approval requests.

2. Select `Administrators ONLY...` if you want only users with the "Modify All Data" permission to be able to edit records that are pending approval. Select `Administrators OR...` if you want the assigned approver to be able to edit the records too. When a record is submitted for approval, it is automatically locked to prevent other users from editing it during the approval process.
3. Click **Next**. If you are editing an existing approval process and do not want to make further changes, click **Save** to store your changes.

Select email notification template

If you select an email template with which to notify approvers that an approval request has been assigned to them, that template will be used for all steps for the approval process. For more information on creating email templates, see "Managing Email Templates" in the Salesforce online help.

1. Optionally, choose an email template to use when notifying approvers that an approval request is assigned to them.
2. Click **Next**. If you are editing an existing approval process and do not want to make further changes, click **Save** to store your changes.

Configure approval request page layout

The approval page is where an approver will approve or reject a request.

1. Select the fields you want to display on the approval request page and click **Add**.
2. Sort the fields by selecting them and clicking **Up** or **Down**.
3. Select `Display approval history information...` to include the Approval History related list that lists such fields as `Date`, `Assigned To`, `Actual Approver`, and `Comments`. To modify the fields displayed on the Approval History related list, see "Customizing Related Lists" in the Salesforce online help.
4. Select `Add Approval History Related List...` to update all the page layouts for this object to include a related list that allows users to submit approval requests and track them.
5. Choose a security setting:

   `Allow approvers to access the approval page only from within the Salesforce application`
   Requires users to log in to Salesforce before approving or rejecting an approval request.

   `Allow approvers to access the approval page only from within the Salesforce application, or externally from a wireless-enabled mobile device`
   Users can approve requests from the email notification they receive via a wireless device. Note that this prevents the approver from selecting a Salesforce user as the next approver.
6. Click **Next**. If you are editing an existing approval process and do not want to make further changes, click **Save** to store your changes.

Specify initial submitters

Specify which users are allowed to submit records for approval. For example, choose Owner if expense reports can only be submitted by record owners.

1. Select a **Submitter Type**, enter a search term, and click **Find**.
2. Select from the list of available submitters and click **Add**.
3. Click **Save**.

Activate the approval process

Activate the process after you have created at least one approval step for the approval process. See "Creating Approval Steps" in the Salesforce online help.

To activate a process:

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**.
2. Click **Activate** next to the process.

Creating Approval Steps

User Permissions Needed	
To create approval steps:	"Customize Application"

Approval steps assign approval requests to various users and define the chain of approval for a particular approval process. Each approval step specifies the attributes a record must have to advance to that approval step, the user who can approve requests for those records, and whether to allow the delegate of the approver to approve the requests. The first approval step in a process also specifies the action to take if a record does not advance to that step. Subsequent steps in the process also allow you to specify what happens if an approver rejects the request.

The actions you associate with an approval step can be reused in workflow rules. To create approval steps:

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**, and select the name of the approval process.
2. Click **New Approval Step** from the Approval Steps related list. If this button is not available, the approval process is active and you cannot add more steps.
3. Enter a name and description for this step.
4. Enter a step number that determines the order of this step in relation to the other steps in this approval process.
5. Click **Next**.
6. Optionally, specify filter criteria to determine the attributes a record must have before Salesforce executes the actions for this step.

   To specify filter criteria, select `Filter records based on the criteria below` and use the instructions for "Entering Filter Criteria" in the Salesforce online help.
7. If you specified filter criteria and this is the first step in your approval process, choose what should happen to records that do not meet the criteria. Options are:

   `Approve...`
   Automatically approves the request and performs all final approval actions.

   `Reject...`
   Automatically rejects the request and performs all final rejection actions.
8. Click **Next**.

9. Select the assigned approver for approval requests created by this step. The assigned approver is the user or members of a queue responsible for approving records that enter this step. The options are:

   - `Let the submitter choose...` prompts the user to manually select the next approver.
   - `Automatically assign...` assigns the approval request to the user in the user custom field displayed in this option. The user custom field in this option is dependent on the user custom field selected for the process.
   - `Assign to...` assigns all approval requests to the same user or queue selected in this option. For more information on approval requests assigned to queues, see "Approval Process Considerations" in the Salesforce online help.

   Note: Make sure the assigned approver has access to read the records for the approval requests and is not a partner user.. For example, a user who does not have read access to an Expenses custom object will not be able to view expense approval requests.

10. Optionally, select `The approver's delegate may also approve this request` if the approver's delegated approver can also approve these requests. A delegate is the user listed in the `Delegated Approver` field on the assigned approver's user detail page.

    Note: A delegated approver cannot reassign an approval request; a delegated approver can only approve or reject approval requests.

11. If this is not the first step in the approval process, specify what you want to happen when the approver rejects a request in this step:

    `Perform all rejection actions...`
    Automatically rejects the request completely regardless of any previous steps that were approved. Salesforce performs all rejection actions specified for this step and all final rejection actions.

    `Perform ONLY the rejection actions for this step...`
    Automatically rejects the request and returns the approval request to the previous approver. Salesforce performs all rejection actions specified for this step.

    Note: If this is the first step in an approval process, the rejection behavior is determined by the Final Rejection Actions for the approval process.

12. Click **Save**.
13. Specify any workflow actions you want to occur during this step:

    Yes, I'd like to create a new approval action...
    Select the type of action and click **Go!** to begin creating an action and associate it with this approval step.

    Yes, I'd like to create a new rejection action...
    Select the type of action and click **Go!** to begin creating an action and associate it with this approval step.

    No, I'll do this later...
    Select this option and click **Go!** to view the details of the approval process.

    Approval actions execute when a record in this step of the approval process is approved. Rejection actions execute when a record in this step is rejected. For instructions on adding actions, see "Selecting Approval Actions" in the Salesforce online help and "Creating Approval Actions" in the Salesforce online help.

14. Optionally, add additional approval actions and rejection actions to the step. Click **Show Actions** next to a step to view the Approval Actions and Rejection Actions related lists.

Initial Submission Actions

User Permissions Needed	
To create or edit initial submission actions:	"Customize Application"

Initial submission actions are the actions that occur when a user first submits a record for approval. For example, an initial submission action can lock the record so that no users can edit it during the approval process. Initial submission actions can also include any approval actions such as assigning a task, sending an email, or updating a field.

When a user submits a record for approval, Salesforce sends an approval request email to the approver as defined in the approval step, and then executes a default initial submission action called "Record Lock." You can select up to 40 additional actions to occur when a record is initially submitted for approval, 10 of each of the following types:

Type	Description
Task	Assigns a task to a user you specify. You can specify the `Subject`, `Status`, `Priority`, and `Due Date` of the task.
Email	Uses an email template you specify to send an email to a designated recipient.
Field Update	Changes the value of a selected field. You can specify a value or create a formula for the new value.
Outbound Message	Sends a message to an endpoint you designate. You can also specify user name and the data you want included in the message.

To manage the initial submission actions for an approval process, click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes** and select the approval process.

The Initial Submission Actions related list shows all the actions that take place when a record is submitted for approval.

- Click **Edit** to change an action. Any changes you make to an action affect any other approval processes or workflow rules that use it. This option is only available for some types of actions.
- Click **Remove** to remove the action from the approval process. This does not delete the action. This option is only available for some types of actions.
- Click **Add Existing** to add another action to the list of actions. See "Selecting Approval Actions" in the Salesforce online help.
- Click **Add New** and select the appropriate type to create a new action and associate it with the approval process. Next, configure the action:

  For workflow alerts:

  1. Enter a description for this alert.
  2. Choose an email template.
  3. Select the type of recipient and choose from the list displayed. Select an entry in the list of Available Recipients and click **Add** to add that entry to the list of Selected Recipients.
  4. Enter up to 5 additional email addresses.
  5. Click **Save**.

  For field updates:

  1. Enter a name and description for this field update.
  2. Choose the object and the field you want to update.

3. Specify the new field value. The available options depend on the type of field you are updating. You can:
   - Choose `A specific value`, and enter the value in the space provided.
   - Choose `A blank value (null)` if you want Salesforce to remove any existing value and leave the field blank. This option may not be available for several reasons such as the field is required or a checkbox.
   - For record owners, choose the user to whom the record should be assigned. For case, lead, and custom object records, you can also choose a queue for this field. Optionally, select `Notify Assignee` to send an email to the new record owner.
   - For checkboxes, choose `True` to select the checkbox and `False` to deselect it.
   - For picklists, select a specific value from the drop-down list, or select the value above or below the current value based on the sorting specified in the picklist definition. If you sort values alphabetically, the values above or below may be different for users in other languages.
   - Choose `Use a formula to set the new value` to calculate the new value based on an expression, merge fields, or other values.
     a. To pass specific Salesforce data, choose the data type in the `Select Field Type` drop-down list and choose one of the fields listed in the `Insert Field` drop-down list.
     b. To insert an operator, choose the appropriate operator icon from the `Insert Operator` drop-down list. Use the examples in "Operators and Functions" in the Salesforce online help.
     c. Optionally, insert a function from the `Functions` list. Functions are pre-built formulas that you can customize with your input parameters. See "Operators and Functions" in the Salesforce online help for a description of each operator and function.
4. Click **Save**.

For outbound messages:

1. Enter a name and description for this outbound message.
2. Enter an endpoint URL for the recipient of the message. Salesforce sends a SOAP message to this endpoint.
3. Select the Salesforce user to use when sending the message. The chosen user controls data visibility for the message that is sent to the endpoint.
4. Select `Include Session ID` if you want the Salesforce session ID included in the outbound message. Include the session ID in your message if you intend to make API calls and you do not want to include a username and password. Sending a username and password is less secure than sending a session ID.
5. Select the fields you want included in the outbound message and click **Add**.

For workflow tasks:

1. Select an assignee. An assignee can be in the form of a user, role, record owner, record creator, sales team role, or account team role depending on the type of record you chose.

   Note: If the assignee of a workflow task is set to the record owner and the owner of a lead or case is a queue, the person who triggered the rule is assigned the task.

   If a custom object has a master-detail relationship with a standard object, the owner of the custom object record is automatically set to the owner of the master standard object record. For example, if a custom object called "Expenses" has a master-detail relationship with Accounts, the owner of each expense record is the owner of the account for the expense.

Likewise, if the assignee of a workflow task is a role and more than one user belongs to that role, the person who triggered the rule becomes the task assignee. We recommend that you do not assign workflow tasks to roles with multiple users. Assigning workflow tasks to roles with one user allows you to easily change the user in that role without modifying the workflow rule.

2. Enter a subject for the task.
3. Choose a due date, status, and priority. Due dates appear in the time zone of the assignee.
4. Check `Notify Assignee` to send an email notification when the task is assigned.
5. Enter any comments to add to the task.
6. Click **Save**.

Final Approval Actions

User Permissions Needed	
To create or edit final approval actions:	"Customize Application"

Final approval actions are the actions that occur when all approval requests for a record are approved. Final approval actions can include any approval actions such as email alerts, field updates, tasks, or outbound messages. For example, a final approval action can change the status to "Approved" and send a notification email.

When a record has been approved by all approvers, Salesforce executes all final approval actions. A default final approval action called "Record Lock" is selected for you. You can modify it to automatically lock or unlock the record. You can select up to 40 additional actions to occur when a record is finally approved, 10 of each of the following types:

Type	Description
Task	Assigns a task to a user you specify. You can specify the `Subject`, `Status`, `Priority`, and `Due Date` of the task.
Email	Uses an email template you specify to send an email to a designated recipient.
Field Update	Changes the value of a selected field. You can specify a value or create a formula for the new value.
Outbound Message	Sends a message to an endpoint you designate. You can also specify user name and the data you want included in the message.

To manage the final approval actions for an approval process, click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**, and select the approval process.

The Final Approval Actions related list shows all the actions that take place when a record is finally approved.

- Click **Edit** to change an action. Any changes you make to an action affect any other approval processes or workflow rules that use it. This option is only available for some types of actions.
- Click **Remove** to remove the action from the approval process. This does not delete the action. This option is only available for some types of actions.
- Click **Add Existing** to add another action to the list of actions. See "Selecting Approval Actions" in the Salesforce online help.
- Click **Add New** and select the appropriate type to create a new action and associate it with the approval process. Next, configure the action:

For workflow alerts:

1. Enter a description for this alert.
2. Choose an email template.
3. Select the type of recipient and choose from the list displayed. Select an entry in the list of Available Recipients and click **Add** to add that entry to the list of Selected Recipients.
4. Enter up to 5 additional email addresses.
5. Click **Save**.

For field updates:

1. Enter a name and description for this field update.
2. Choose the object and the field you want to update.
3. Specify the new field value. The available options depend on the type of field you are updating. You can:
   - Choose `A specific value`, and enter the value in the space provided.
   - Choose `A blank value (null)` if you want Salesforce to remove any existing value and leave the field blank. This option may not be available for several reasons such as the field is required or a checkbox.
   - For record owners, choose the user to whom the record should be assigned. For case, lead, and custom object records, you can also choose a queue for this field. Optionally, select `Notify Assignee` to send an email to the new record owner.
   - For checkboxes, choose `True` to select the checkbox and `False` to deselect it.
   - For picklists, select a specific value from the drop-down list, or select the value above or below the current value based on the sorting specified in the picklist definition. If you sort values alphabetically, the values above or below may be different for users in other languages.
   - Choose `Use a formula to set the new value` to calculate the new value based on an expression, merge fields, or other values.
     a. To pass specific Salesforce data, choose the data type in the `Select Field Type` drop-down list and choose one of the fields listed in the `Insert Field` drop-down list.
     b. To insert an operator, choose the appropriate operator icon from the `Insert Operator` drop-down list. Use the examples in "Operators and Functions" in the Salesforce online help.
     c. Optionally, insert a function from the `Functions` list. Functions are pre-built formulas that you can customize with your input parameters. See "Operators and Functions" in the Salesforce online help for a description of each operator and function.
4. Click **Save**.

For outbound messages:

1. Enter a name and description for this outbound message.
2. Enter an endpoint URL for the recipient of the message. Salesforce sends a SOAP message to this endpoint.
3. Select the Salesforce user to use when sending the message. The chosen user controls data visibility for the message that is sent to the endpoint.
4. Select `Include Session ID` if you want the Salesforce session ID included in the outbound message. Include the session ID in your message if you intend to make API calls and you do not want to include a username and password. Sending a username and password is less secure than sending a session ID.
5. Select the fields you want included in the outbound message and click **Add**.

For workflow tasks:

1. Select an assignee. An assignee can be in the form of a user, role, record owner, record creator, sales team role, or account team role depending on the type of record you chose.

   Note: If the assignee of a workflow task is set to the record owner and the owner of a lead or case is a queue, the person who triggered the rule is assigned the task.

   If a custom object has a master-detail relationship with a standard object, the owner of the custom object record is automatically set to the owner of the master standard object record. For example, if a custom object called "Expenses" has a master-detail relationship with Accounts, the owner of each expense record is the owner of the account for the expense.

   Likewise, if the assignee of a workflow task is a role and more than one user belongs to that role, the person who triggered the rule becomes the task assignee. We recommend that you do not assign workflow tasks to roles with multiple users. Assigning workflow tasks to roles with one user allows you to easily change the user in that role without modifying the workflow rule.

2. Enter a subject for the task.
3. Choose a due date, status, and priority. Due dates appear in the time zone of the assignee.
4. Check `Notify Assignee` to send an email notification when the task is assigned.
5. Enter any comments to add to the task.
6. Click **Save**.

Final Rejection Actions

User Permissions Needed	
To create or edit final rejection actions:	"Customize Application"

Final rejection actions are the actions that occur when all approval requests for a record are rejected. Final rejection actions can include any approval actions such as email alerts, field updates, tasks, or outbound messages. For example, a final rejection action can change the status to "Rejected", send a notification email, and unlock the record so that users can edit it before resubmitting.

When a record has been rejected by all approvers, Salesforce executes all final rejection actions. A default final rejection action called "Record Lock" is selected for you. You can modify it to automatically lock or unlock a record. You can select up to 40 additional actions to occur when a record is rejected, 10 of each of the following types:

Type	Description
Task	Assigns a task to a user you specify. You can specify the `Subject`, `Status`, `Priority`, and `Due Date` of the task.
Email	Uses an email template you specify to send an email to a designated recipient.
Field Update	Changes the value of a selected field. You can specify a value or create a formula for the new value.
Outbound Message	Sends a message to an endpoint you designate. You can also specify user name and the data you want included in the message.

To manage the final rejection actions for an approval process, click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes** and select the approval process.

- The Final Rejection Actions related list shows all the actions that take place when a record is finally rejected.
- Click **Edit** to change an action. Any changes you make to an action affect any other approval processes or workflow rules that use it. This option is only available for some types of actions.
- Click **Remove** to remove the action from the approval process. This does not delete the action. This option is only available for some types of actions.
- Click **Add Existing** to add another action to the list of actions. See "Selecting Approval Actions" in the Salesforce online help.
- Click **Add New** and select the appropriate type to create a new action and associate it with the approval process. Next, configure the action:

  For workflow alerts:

  1. Enter a description for this alert.
  2. Choose an email template.
  3. Select the type of recipient and choose from the list displayed. Select an entry in the list of Available Recipients and click **Add** to add that entry to the list of Selected Recipients.
  4. Enter up to 5 additional email addresses.
  5. Click **Save**.

  For field updates:

  1. Enter a name and description for this field update.
  2. Choose the object and the field you want to update.
  3. Specify the new field value. The available options depend on the type of field you are updating. You can:

     - Choose `A specific value`, and enter the value in the space provided.
     - Choose `A blank value (null)` if you want Salesforce to remove any existing value and leave the field blank. This option may not be available for several reasons such as the field is required or a checkbox.
     - For record owners, choose the user to whom the record should be assigned. For case, lead, and custom object records, you can also choose a queue for this field. Optionally, select `Notify Assignee` to send an email to the new record owner.
     - For checkboxes, choose `True` to select the checkbox and `False` to deselect it.
     - For picklists, select a specific value from the drop-down list, or select the value above or below the current value based on the sorting specified in the picklist definition. If you sort values alphabetically, the values above or below may be different for users in other languages.
     - Choose `Use a formula to set the new value` to calculate the new value based on an expression, merge fields, or other values.

       a. To pass specific Salesforce data, choose the data type in the `Select Field Type` drop-down list and choose one of the fields listed in the `Insert Field` drop-down list.
       b. To insert an operator, choose the appropriate operator icon from the `Insert Operator` drop-down list. Use the examples in "Operators and Functions" in the Salesforce online help.
       c. Optionally, insert a function from the `Functions` list. Functions are pre-built formulas that you can customize with your input parameters. See "Operators and Functions" in the Salesforce online help for a description of each operator and function.

  4. Click **Save**.

For outbound messages:

1. Enter a name and description for this outbound message.
2. Enter an endpoint URL for the recipient of the message. Salesforce sends a SOAP message to this endpoint.
3. Select the Salesforce user to use when sending the message. The chosen user controls data visibility for the message that is sent to the endpoint.
4. Select `Include Session ID` if you want the Salesforce session ID included in the outbound message. Include the session ID in your message if you intend to make API calls and you do not want to include a username and password. Sending a username and password is less secure than sending a session ID.
5. Select the fields you want included in the outbound message and click **Add**.

For workflow tasks:

1. Select an assignee. An assignee can be in the form of a user, role, record owner, record creator, sales team role, or account team role depending on the type of record you chose.

   Note: If the assignee of a workflow task is set to the record owner and the owner of a lead or case is a queue, the person who triggered the rule is assigned the task.

   If a custom object has a master-detail relationship with a standard object, the owner of the custom object record is automatically set to the owner of the master standard object record. For example, if a custom object called "Expenses" has a master-detail relationship with Accounts, the owner of each expense record is the owner of the account for the expense.

   Likewise, if the assignee of a workflow task is a role and more than one user belongs to that role, the person who triggered the rule becomes the task assignee. We recommend that you do not assign workflow tasks to roles with multiple users. Assigning workflow tasks to roles with one user allows you to easily change the user in that role without modifying the workflow rule.

2. Enter a subject for the task.
3. Choose a due date, status, and priority. Due dates appear in the time zone of the assignee.
4. Check `Notify Assignee` to send an email notification when the task is assigned.
5. Enter any comments to add to the task.
6. Click **Save**.

Creating Approval Actions

User Permissions Needed	
To create approval actions:	"Customize Application"

Create approval actions if you want an approval step, initial submission, final approval, or final rejection to trigger some type of action such as an email or field update. For example, you may have an expense approval process in Salesforce that you want to send an outbound message to your Oracle accounting service to print expense checks when expense approval requests are approved.

To create an approval action:

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**.
2. Select the approval process you want associated with the action.

3. Click **Add New** from the appropriate related list. When creating actions for an approval step, click **Show Actions** if they are hidden.
4. Choose the type of action. The list of available actions differs depending on your settings and whether you have reached the limit for any type of action:

   - "Configure the alert" in the Salesforce online help.
   - "Configure the field update" in the Salesforce online help.
   - "Configure the outbound message" in the Salesforce online help.
   - "Configure the task" in the Salesforce online help.

   For workflow alerts:

   a. Enter a description for this alert.
   b. Choose an email template.
   c. Select the type of recipient and choose from the list displayed. Select an entry in the list of Available Recipients and click **Add** to add that entry to the list of Selected Recipients.
   d. Enter up to 5 additional email addresses.
   e. Click **Save**.

   For field updates:

   a. Enter a name and description for this field update.
   b. Choose the object and the field you want to update.
   c. Specify the new field value. The available options depend on the type of field you are updating. You can:

      - Choose `A specific value`, and enter the value in the space provided.
      - Choose `A blank value (null)` if you want Salesforce to remove any existing value and leave the field blank. This option may not be available for several reasons such as the field is required or a checkbox.
      - For record owners, choose the user to whom the record should be assigned. For case, lead, and custom object records, you can also choose a queue for this field. Optionally, select `Notify Assignee` to send an email to the new record owner.
      - For checkboxes, choose `True` to select the checkbox and `False` to deselect it.
      - For picklists, select a specific value from the drop-down list, or select the value above or below the current value based on the sorting specified in the picklist definition. If you sort values alphabetically, the values above or below may be different for users in other languages.
      - Choose `Use a formula to set the new value` to calculate the new value based on an expression, merge fields, or other values.

        a. To pass specific Salesforce data, choose the data type in the `Select Field Type` drop-down list and choose one of the fields listed in the `Insert Field` drop-down list.
        b. To insert an operator, choose the appropriate operator icon from the `Insert Operator` drop-down list. Use the examples in "Operators and Functions" in the Salesforce online help.
        c. Optionally, insert a function from the `Functions` list. Functions are pre-built formulas that you can customize with your input parameters. See "Operators and Functions" in the Salesforce online help for a description of each operator and function.

   d. Click **Save**.

   For outbound messages:

   a. Enter a name and description for this outbound message.

b. Enter an endpoint URL for the recipient of the message. Salesforce sends a SOAP message to this endpoint.
c. Select the Salesforce user to use when sending the message. The chosen user controls data visibility for the message that is sent to the endpoint.
d. Select `Include Session ID` if you want the Salesforce session ID included in the outbound message. Include the session ID in your message if you intend to make API calls and you do not want to include a username and password. Sending a username and password is less secure than sending a session ID.
e. Select the fields you want included in the outbound message and click **Add**.

For workflow tasks:

a. Select an assignee. An assignee can be in the form of a user, role, record owner, record creator, sales team role, or account team role depending on the type of record you chose.

Note: If the assignee of a workflow task is set to the record owner and the owner of a lead or case is a queue, the person who triggered the rule is assigned the task.

If a custom object has a master-detail relationship with a standard object, the owner of the custom object record is automatically set to the owner of the master standard object record. For example, if a custom object called "Expenses" has a master-detail relationship with Accounts, the owner of each expense record is the owner of the account for the expense.

Likewise, if the assignee of a workflow task is a role and more than one user belongs to that role, the person who triggered the rule becomes the task assignee. We recommend that you do not assign workflow tasks to roles with multiple users. Assigning workflow tasks to roles with one user allows you to easily change the user in that role without modifying the workflow rule.

b. Enter a subject for the task.
c. Choose a due date, status, and priority. Due dates appear in the time zone of the assignee.
d. Check `Notify Assignee` to send an email notification when the task is assigned.
e. Enter any comments to add to the task.
f. Click **Save**.

Note: The actions you create for approval processes can be reused in workflow rules.

Selecting Approval Actions

User Permissions Needed	
To select approval actions:	"Customize Application"

There are four types of approval actions:

Type	Description
Task	Assigns a task to a user you specify. You can specify the `Subject`, `Status`, `Priority`, and `Due Date` of the task.

Type	Description
Email	Uses an email template you specify to send an email to a designated recipient.
Field Update	Changes the value of a selected field. You can specify a value or create a formula for the new value.
Outbound Message	Sends a message to an endpoint you designate. You can also specify user name and the data you want included in the message.

You can associate approval actions with approval steps, initial submission actions, final approval actions, and final rejection actions. You can also reuse these actions for workflow rules. Before you begin, click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes** and select the approval process you want associated with the actions.

To select an approval action:

1. Click **Add Existing** from the appropriate related list on the detail page of any approval process. If the **Add Existing** button does not appear on an approval step, click **Show Actions**.

   Alternatively, click **Add New** to create a new action and apply it to the selected approval process. For instructions on creating actions, see "Creating Approval Actions" in the Salesforce online help.
2. Choose the type of action.
3. Select the action in the list of available actions and click **Add** to add the action to the list of selected actions.
4. Click **Save**.

Using the Approval Process Jump Start Wizard

User Permissions Needed	
To create approval processes:	"Customize Application"

The Approval Process Jump Start Wizard helps you create a simple one-step approval process in just a few clicks. However, to make your process as functional and complete as possible, there are a few things you should do first:

1. If you would like to automate approval routing, you should first create a custom hierarchical relationship field, such as Direct Manager on the user object.
2. Create an email template to notify an approver that they need to approve or reject a step in an approval process. Remember to add approval merge fields so an approver can go to the approval page directly from the email. For more information, see"Managing Email Templates" in the Salesforce online help.
3. Create an email template as confirmation to a record owner that a step of theirs in the approval process has been approved or rejected.
4. Create the workflow actions you want to occur while a record is in the process of being approved. For more information, see "Managing Workflow" in the Salesforce online help.

Design your approval process quickly using the jump start wizard. It automates the process of creating an approval process by choosing some default options for you. For a list of the options the jump start wizard chooses automatically, see "Approval Process Jump Start Default Selections" in the Salesforce online help.

To use the jump start wizard to create an approval process:

1. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**.
2. Choose the object for the new approval process.
3. Click **Create New Approval Process** and choose **Use Jump Start Wizard** from the drop-down button.
4. Enter a name for the new approval process.

5. Optionally, choose an email template to use when notifying approvers that an approval request is assigned to them.
6. Select `Add Approval History Related List...` to update all the page layouts for this object to include a related list that allows users to submit approval requests and track them.
7. Enter filter criteria that records must match in order to be included in this approval process. Leave the filter blank if you want all records submitted to be included in the approval process. For information on using filter criteria, see "Entering Filter Criteria" in the Salesforce online help.

   Note: Select a current user field if you want the filter based on the user submitting an approval request.

8. Select the assigned approver for approval requests created by this step. The assigned approver is the user or members of a queue responsible for approving records that enter this step. The options are:

   - `Let the submitter choose...` prompts the user to manually select the next approver.
   - `Automatically assign...` assigns the approval request to the user in the user custom field displayed in this option. The user custom field in this option controls the user custom field available for each step in this process.

     To create a new custom hierarchy field that stores the direct manager for each user, click `Create New Field` from this option. For information on creating a custom field, see "Adding Fields" in the Salesforce online help.
   - `Assign to...` assigns all approval requests to the same user or queue selected in this option. For more information on approval requests assigned to queues, see "Approval Process Considerations" in the Salesforce online help.

   Note: Make sure the assigned approver has access to read the records for the approval requests. For example, a user who does not have read access to an Expenses custom object will not be able to view expense approval requests.

9. Click **Save**. The Approval Process Detail page appears.
10. Select approval actions. For more information, see "Selecting Approval Actions" in the Salesforce online help.
11. When you are ready to use the approval process, activate it:

    a. Click **Setup ➤ Customize ➤ Workflow & Approvals ➤ Approval Processes**.
    b. Click **Activate** next to an inactive process to activate it.

Approval Process Jump Start Default Selections

The jump start wizard automates creating an approval process by automatically choosing some default options for you. When you use the jump start wizard, your approval process will have the following attributes:

- Users must have the "Modify All Data" permission to edit records that are awaiting approval in the approval process.
- The approval request page layout displays the record name (or number), owner, date created, and approval history.
- The security settings prevent an approver from accessing the approval page externally from a wireless-enabled mobile device.
- The owner of a record is the only person who can submit an approval request.
- Records are locked when submitted for approval.
- Records remain locked until approved or rejected.
- Rejected records are unlocked.
- There are no auto-approve or auto-reject actions.
- No email notification is sent upon approval or rejection.
- No field values are automatically updated during the approval process.
- An approver cannot automatically delegate another user to approve his or her approval requests.

Note: After creating an approval process using the jump start wizard, you can change any of the above attributes by clicking **Edit** from any approval process list page, and you can add additional steps from the approval process detail page. However, you cannot edit the Record Lock action on the Initial Submission Actions list.

Managing Multiple Approval Requests

User Permissions Needed	
To manage multiple approval requests:	"Modify All Data"

To transfer multiple approval requests from one user to another or to remove multiple approval requests from the approval process:

1. Before transferring an approval request, make sure the new assigned approver has access to read the records for the approval requests. For example, a user that does not have read access to an Expenses custom object will not be able to view expense approval requests.
2. Choose **Setup ➤ Data Management ➤ Mass Transfer Approval Requests**.
3. Enter the search conditions that the approval requests you are transferring must match. For example, you could search for approval requests that were originally submitted by a particular user by specifying "Original Submitter equals jsmith." For more information, see "Entering Filter Criteria" in the Salesforce online help.
4. Click **Find** to search for approval requests that match.
5. Choose an option:
   - `Mass remove records from an approval process` unlocks the records and removes them from any approval process so they no longer appear on the approver's list of pending approval requests.
   - `Mass transfer outstanding approval requests to a new user` allows you to select a user and assign that user as the approver for all approval requests selected.
6. Optionally, enter any comments to be stored with the approval requests. The comments you enter are displayed on the Approval History related list if your administrator has customized it to include the `Comments` field.
7. Select the checkbox next to each approval request you want to transfer or remove from the approval process, depending on the option you selected previously.
8. Click **Transfer** or **Remove**, depending on the option you selected previously.

Approval History

User Permissions Needed	
To use the Approval History related list:	Permissions vary depending on the approval process settings

The Approval History related list tracks a record through the approval process. If an approval process exists for an object, you may see this related list on a record detail page. Depending on the approval process settings, use this related list for the following:

- To submit a record for approval, click **Submit for Approval**. Salesforce begins the approval process if any approval processes apply to the record. This option is not available after the record has been submitted. Depending on the approval process, you may be prompted to select the next approver.
- To take a record out of the approval process, click **Remove from Approval Process**. This is only available if the record is in an approval process.
- To assign the approval request to another user, click **Reassign** next to an item.

- To display the approval request detail page and approve or reject a pending approval request, click **Approve / Reject** next to an item.

Note: You must have read access on a record to approve, reject, or reassign an approval request for it.

Depending on how your administrator customizes the Approval History related list, it can contain the following `Status` values:

`Status`	Definition
Submitted	The record has been submitted for a approval.
Pending	The record has been submitted for approval and is awaiting approval or rejection.
Approved	The record has been approved.
Rejected	The record has been rejected.
Reassigned	The record has been submitted for approval but assigned to a different approver.

Note: Before you can submit a record for approval, it must meet the criteria for an active approval process. Contact your administrator to find out about the attributes a record must have to be included in an active approval process for your organization.

Items To Approve

User Permissions Needed	
To use the Items To Approve related list:	Permissions vary depending on the approval process settings

The Items To Approve related list tracks the open approval requests assigned to you. If your administrator has created an approval process for your organization, you may see this related list on your home page. Depending on the approval process settings, you can:

- Click an approval request to view more details about it.
- To assign the approval request to another user, click **Reassign** next to an item.
- To display the approval request detail page and approve or reject a pending approval request, click **Approve / Reject** next to an item.

Note: You must have read access on a record to approve, reject, or reassign an approval request for it.

- Click **Manage All** to manage all of your assigned approval requests. Next, select approval requests by checking the appropriate boxes. Optionally, check the box in the column header to select all currently displayed items.
  - Click **Reassign** to assign the selected approval requests to another user, choose the user, enter any comments, and click **Save**.
  - Click **Approve / Reject** to display the approval request detail page and click **Approve** or **Reject** to approve or reject all selected approval requests at once.

Note: You must have read access on a record to approve, reject, or reassign an approval request for it.

Data Validation

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

The data your users enter must be valid and accurate to support your business decisions. Validation rules give administrators an easy way to build validation rules that ensure the validity of data before it is saved. Administrators can implement validation rules with clicks, not code, reducing implementation time and costs. With validation rules in Winter '07, you can now:

- Prevent invalid data from being saved
- Define error messages to display when users enter invalid data
- Create sophisticated validation rules using formulas
- Prevent duplicate values
- Make fields conditionally required
- Enforce validation through Salesforce and the Apex API

Implementation Tips

- It is not necessary to begin your validation rule formula with an IF function. Any Boolean error condition expression works. For example:
  - Correct: `CloseDate < TODAY()`
  - Incorrect: `IF(CloseDate < TODAY(), TRUE, FALSE)`
- Validation formulas cannot reference merge fields for formula, auto number, multi-select picklist, or compound address fields like`Mailing Address`. However, merge fields for individual address fields, such as `Billing City`, can be used in validation formulas.
- When one validation rule fails, Salesforce continues to check any additional validation rules on that field or any other field on the page and displays all appropriate error messages at once.
- The detail page of a custom activity field does not list associated validation rules.
- Offline Edition and Outlook Edition do not run validation rules.
- Lead conversion ignores validation rules.
- Salesforce runs validation rules before creating records submitted via Web-to-Lead and Web-to-Case, and only creates records that have valid values.
- The Salesforce Data Loader and the Apex API run validation rules.
- Salesforce runs validation rules on records before they are imported. Records that fail validation are not imported. Consider deactivating the appropriate validation rules before running an import if they affect the records you are importing.
- Validation rules run before assignment rules, auto-response rules, escalation rules, and workflow rules. However, updates to records based on workflow rules do not trigger validation rules. Therefore, workflow rules can invalidate previously valid fields.
- When defining validation rules, you can set the error location to `Top of Page` or `Field`. If the error location is set to a field that is later deleted or a field that is not visible on the page layout Salesforce automatically changes the error location to `Top of Page`.
- An "Invalid Formula" error displays if your formula has a run-time error such as division by zero.
- When a validation rule contains the BEGINS or CONTAINS functions, it processes blank fields as valid. For example, if you have a validation rule that tests to see if the serial number of an asset begins with "3," all assets that have a blank serial number are considered valid.

- Some merge fields display as radio buttons but function like picklist fields when referenced in a formula. Use the values "Read," "Edit," and "None" when referencing the following merge fields in a formula:
  - $UserRole.CaseAccessForAccountOwner
  - $UserRole.OpportunityAccessForAccountOwner
  - CaseAccessLevel (on Territory)
  - OpportunityAccessLevel (on Territory)

  Use the values "Read," "Edit," and "All" when referencing the following merge fields in a formula:

  - AccountAccessLevel (on Territory)
- Text fields are never null even when they are blank. Avoid using text fields in "NULLVALUE" in the Salesforce online help or "ISNULL" in the Salesforce online help functions. Instead, use the "LEN" in the Salesforce online help function to determine if a text field is blank, such as `IF( LEN( Field)=0 , "this is empty", "this is not empty")`.

Best Practices

- When creating validation rules, consider all the settings in your organization that can make a record fail validation such as assignment rules, field updates, field-level security, or fields hidden on a page layout.
- Be careful not to create two contradicting validation rules for the same field; otherwise, users will not be able to save the record.
- A poorly designed validation rule can prevent users from saving valid data. Make sure you thoroughly test a validation rule before activating it. Users will never be able to save a record if your formula always returns a "True" value.
- Because validation rules run on the Self-Service portal, make sure your validation rules do not prevent Self-Service users from creating cases.
- Write helpful error messages:

  Always include the field label.
  Users may not know what field is failing validation, especially if your error message is located at the top of the page.

  Give instructions.
  An error message like "invalid entry" does not tell them what type of entry is valid. Use an error message like "`Close Date` must be after today."

  If appropriate, translate your error messages.
  If users in your organization speak different languages, translate your error messages using the translation workbench. See "Setting Up Translation Workbench" in the Salesforce online help.

  Assign error numbers to validation rules and error messages.
  This allows you to identify the source of the error.
- Consider what fields are visible and editable for users on their page layouts due to field-level security. Fields that are not visible or editable for the user are still available in the formula for a validation rule and can cause a validation error. If the error message is designed to display next to a hidden field, it will display at the top of the page.

  For such fields, consider adding a default value to automatically populate the field with a valid value since users will not be able to edit the field to correct any validation errors. See "Defining Default Field Values" in the Salesforce online help.
- Use the record type ID merge field in your formula to apply different validation for different record types. For information about merge fields, see "About Merge Fields" in the Salesforce online help.
- If person accounts are enabled for your organization:
  - To define a validation rule that applies only to person accounts, use the `IsPersonAccount` merge field.
  - You must handle person account names and business account names separately in account validation rules. For business accounts, use the `Name` merge field. For person accounts, use the `FirstName` and `LastName` merge fields.

- `Birthdate`, `Email`, and other fields that are only supported for person accounts are available as merge fields in account validation rules. When you use one of those merge fields, note that business account records will be processed as if those fields have blank values.

- When using a validation rule to ensure that a number field contains a specific value, use the ISNULL function to include fields that do not contain any value. For example, to validate that a custom field contains a value of '1', use the following validation rule to display an error if the field is blank or any other number:

```
OR(ISNULL(field__c), field__c<>1)
```

Setting Up Validation Rules

About Validation Rules

Improve the quality of your data using validation rules. Validation rules verify that the data a user enters in a record meets the standards you specify before the user can save the record. A validation rule can contain a formula or expression that evaluates the data in one or more fields and returns a value of "True" or "False." Validation rules also include an error message to display to the user when the rule returns a value of "True."

After you have defined validation rules:

1. The user chooses to create a new record or edit an existing record.
2. The user clicks **Save**.
3. Salesforce executes all validation rules.
   - If all data is valid, Salesforce saves the record.
   - If any data is invalid, Salesforce displays the associated error message without saving the record.
4. The user makes the necessary changes and clicks **Save** again.

You can specify the error message to display when a record fails validation and 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 display in red text and are preceded by the word "Error."

Use validation rules for the following objects:

- Accounts
- Activities (tasks and events)
- Assets
- Campaigns
- Cases
- Contacts
- Contracts
- Custom objects
- Leads
- Opportunities
- Opportunity products
- Orders
- Products
- Solutions
- Users

Defining Validation Rules

User Permissions Needed	
To view field validation rules:	"View Setup and Configuration"
To define or change field validation rules:	"Customize Application"

Validation rules verify that the data a user enters in a record meets the standards you specify before the user can save the record. A validation rule can contain a formula or expression that evaluates the data in one or more fields and returns a value of "True" or "False." Validation rules also include an error message to display to the user when the rule returns a value of "True."

Before creating validation rules, review the "Validation Rule Considerations" in the Salesforce online help.

To create validation rules:

1. For standard objects, click **Setup ➤ Customize**, select the appropriate activity, tab, or users link, and click **Validation Rules**.

   For custom objects, click **Setup ➤ Build ➤ Custom Objects** and select the custom object.
2. Click **New** in the Validation Rules related list.
3. Enter the properties of your validation rule:

Field	Description
`Rule Name`	Unique identifier of up to 80 characters with no spaces or special characters.
`Active`	Checkbox that indicates if the rule is enabled.
`Description`	For internal purposes only. Use this field to enter a 255 character or less description that distinguishes the validation rule from others.
`Error Condition Formula`	The expression used to validate the field. See "Building Formulas" in the Salesforce online help and "Operators and Functions" in the Salesforce online help.
`Error Message`	The message that displays to the user when a field fails the validation rule. If your organization uses the translation workbench, you can translate the error message into the languages Salesforce supports. See "Setting Up Translation Workbench" in the Salesforce online help.
`Error Location`	Determines where on the page to display the error. To display the error next to a field, choose `Field` and select the field. If the error location is a field, the validation rule is also listed on the detail page of that field. If the error location is set to a field that is later deleted or a field that is not visible on the page layout Salesforce automatically changes the error location to `Top of Page`.

4. Click **Check Syntax** to check your formula for errors.

5. Click **Save** to finish or **Save & New** to create additional validation rules.

Note: The detail page of a custom activity field does not list associated validation rules. To edit the validation rule for a custom activity field, select the validation rule by clicking **Setup ➤ Customize ➤ Activities** and choose **Task Validation Rules** or **Event Validation Rules**.

Useful Validation Formulas

User Permissions Needed	
To view field validation rules:	"View Setup and Configuration"
To define or change field validation rules:	"Customize Application"

Use the following samples for validation rules in Salesforce and AppExchange apps, including:

- "Account Validation Rules" in the Salesforce online help
- "Contact Validation Rules" in the Salesforce online help
- "Opportunity Management Validation Rules" in the Salesforce online help
- "Service & Support Validation Rules" in the Salesforce online help
- "User, Role, and Profile Validation Rules" in the Salesforce online help
- "Account Address Validation Rules" in the Salesforce online help
- "Date Validation Rules" in the Salesforce online help
- "Number Validation Rules" in the Salesforce online help
- "Other Validation Rules" in the Salesforce online help

Account Address Validation Rules

Billing Zip Code

Description:	Validates that the account `Billing Zip/Postal Code` is in 99999 or 99999-9999 format if `Billing Country` is USA or blank. It checks each digit separately to verify if it is a number.
Formula:	`OR(AND(OR(BillingCountry = "USA", LEN(BillingCountry) = 0), LEN(BillingPostalCode) <>5, LEN(BillingPostalCode) <> 10), NOT(CONTAINS("0123456789", LEFT(BillingPostalCode, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 2, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 3, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 4, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 5, 1))), AND(LEN(BillingPostalCode) = 10, OR(MID(BillingPostalCode , 6, 1) <> "-", NOT(CONTAINS("0123456789", MID(BillingPostalCode , 7, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 8, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 9, 1))), NOT(CONTAINS("0123456789", MID(BillingPostalCode , 10, 1))))))`
Error Message:	Zip code must be in 99999 or 99999-9999 format.
Error Location:	**Billing Zip/Postal Code**

Shipping Zip Code

Description:	Validates that the account `Shipping Zip/Postal Code` is in 99999 or 99999-9999 format if `Shipping Country` is USA or blank.
Formula:	`OR(AND(OR(ShippingCountry = "USA", LEN(ShippingCountry) = 0), LEN(ShippingPostalCode) <>5, LEN(ShippingPostalCode) <> 10), NOT(CONTAINS("0123456789", LEFT(ShippingPostalCode, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 2, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 3, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 4, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 5, 1))), AND(LEN(ShippingPostalCode) = 10, OR(MID(ShippingPostalCode , 6, 1) <> "-", NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 7, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 8, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 9, 1))), NOT(CONTAINS("0123456789", MID(ShippingPostalCode , 10, 1))))))`
Error Message:	Zip code must be in 99999 or 99999-9999 format.
Error Location:	**Shipping Zip/Postal Code**

Valid Billing State (US)

Description:	Validates that the account `Billing State/Province` is a valid two-character abbreviation if `Billing Country` is US, USA, or blank.
Formula:	`AND (OR(BillingCountry = "US", BillingCountry="USA", LEN(BillingCountry)=0), OR(LEN(BillingState) < 2, NOT(CONTAINS("AL:AK:AZ:AR:CA:CO:CT:DE:DC:FL:GA:HI:ID:" & "IL:IN:IA:KS:KY:LA:ME:MD:MA:MI:MN:MS:MO:MT:NE:NV:NH:" & "NJ:NM:NY:NC:ND:OH:OK:OR:PA:RI:SC:SD:TN:TX:UT:VT:VA:" & "WA:WV:WI:WY", BillingState)))`
Error Message:	A valid two-letter state code is required.
Error Location:	`Billing State/Province`

Valid Billing Province (Canada)

Description:	Validates that the account `Billing State/Province` is a valid two-character abbreviation if `Billing Country` is CA or CAN.

Formula:	`AND (`
	`  OR(BillingCountry = "CA", BillingCountry="CAN"),`
	`  OR(`
	`  LEN(BillingState) < 2,`
	`  NOT(`
	`  CONTAINS("AB:BC:MB:NB:NL:NT:NS:NU:ON:PC:QC:SK:YT", BillingState)`
	`)))`

Error Message:	A valid two-letter province code is required.
Error Location:	`Billing State/Province`

Valid Shipping State

Description:	Validates that the account `Shipping State/Province` is a valid two-character abbreviation if `Shipping Country` is US, USA, or blank.

Formula:	`AND (`
	`OR(ShippingCountry = "US", ShippingCountry="USA", LEN(ShippingCountry)=0),`
	
	`OR(`
	`LEN(ShippingState) < 2,`
	`NOT(`
	`CONTAINS("AL:AK:AZ:AR:CA:CO:CT:DE:DC:FL:GA:HI:ID:" &`
	`"IL:IN:IA:KS:KY:LA:ME:MD:MA:MI:MN:MS:MO:MT:NE:NV:NH:" &`
	`"NJ:NM:NY:NC:ND:OH:OK:OR:PA:RI:SC:SD:TN:TX:UT:VT:VA:" &`
	`"WA:WV:WI:WY", ShippingState)`
	`)))`

Error Message:	A valid two-letter state abbreviation is required.
Error Location:	`Shipping State/Province`

Valid Shipping Province (Canada)

Description:	Validates that the account `Shipping State/Province` is a valid two-character abbreviation, if `Billing Country` is CA or CAN.

Formula:	`AND (`
	`OR(ShippingCountry = "CA", ShippingCountry="CAN"),`
	`OR(`
	`LEN(ShippingState) < 2,`
	`NOT(`
	`CONTAINS("AB:BC:MB:NB:NL:NT:NS:NU:ON:PC:QC:SK:YT", ShippingState)`
	`)))`

Error Message:	A valid two-letter province abbreviation is required.
Error Location:	`Shipping State/Province`

Valid Billing Country

Description:	Validates that the account `Billing Country` is a valid ISO 3166 three-letter code.

Formula:	`OR(`
	`LEN(BillingCountry) = 1,`
	`LEN(BillingCountry) = 2,`
	`NOT(`
	`CONTAINS(`
	`"AFG:ALB:DZA:ASM:AND:AGO:AIA:ATA:ATG:ARG:ARM:ABW:" &`
	`"AUS:AUT:AZE:BHS:BHR:BGD:BRB:BLR:BEL:BLZ:BEN:BMU:BTN:BOL:" &`
	`"BIH:BWA:BVT:BRA:IOT:BRN:BGR:BFA:BDI:KHM:CMR:CAN:CPV:CYM:" &`
	`"CAF:TCD:CHL:CHN:CXR:CCK:COL:COM:COG:COD:COK:CRI:CIV:HRV:" &`
	`"CUB:CYP:CZE:DNK:DJI:DMA:DOM:ECU:EGY:SLV:GNQ:ERI:EST:ETH:FLK:" &`
	`"FRO:FJI:FIN:FRA:GUF:PYF:ATF:GAB:GMB:GEO:DEU:GHA:GIB:GRC:GRL:" &`
	`"GRD:GLP:GUM:GTM:GIN:GNB:GUY:HTI:HMD:VAT:HND:HKG:HUN:ISL:" &`
	`"IND:IDN:IRN:IRQ:IRL:ISR:ITA:JAM:JPN:JOR:KAZ:KEN:KIR:PRK:KOR:KWT:" &`
	`"KGZ:LAO:LVA:LBN:LSO:LBR:LBY:LIE:LTU:LUX:MAC:MKD:MDG:MWI:MYS:" &`
	`"MDV:MLI:MLT:MHL:MTQ:MRT:MUS:MYT:MEX:FSM:MDA:MCO:MNG:MSR:MAR:" &`
	`"MOZ:MMR:NAM:NRU:NPL:NLD:ANT:NCL:NZL:NIC:NER:NGA:NIU:NFK:MNP:" &`
	`"NOR:OMN:PAK:PLW:PSE:PAN:PNG:PRY:PER:PHL:PCN:POL:PRT:PRI:QAT:" &`
	`"REU:ROU:RUS:RWA:SHN:KNA:LCA:SPM:VCT:WSM:SMR:STP:SAU:SEN:SCG:" &`
	`"SYC:SLE:SGP:SVK:SVN:SLB:SOM:ZAF:SGS:ESP:LKA:SDN:SUR:SJM:SWZ:" &`
	`"SWE:CHE:SYR:TWN:TJK:TZA:THA:TLS:TGO:TKL:TON:TTO:TUN:TUR:TKM:" &`
	`"TCA:TUV:UGA:UKR:ARE:GBR:USA:UMI:URY:UZB:VUT:VEN:VNM:VGB:VIR:" &`
	`"WLF:ESH:YEM:ZMB:ZWE:",`
	`BillingCountry )))`

Error Message:	A valid three-letter country code is required.
Error Location:	`Billing Country`

Account Validation Rules

Account Number Length

Description:	Validates that the `Account Number` is exactly seven digits (if it is not blank). The number seven is simply illustrative. You can change this to any number you like.

Formula:	`AND(`
	`LEN(AccountNumber) > 0,`
	`LEN(AccountNumber) <> 7`
	`)`

Error Message:	Account Number must be seven digits.
Error Location:	**Account Number**

Annual Revenue Range

Description:	Validates that the account `Annual Revenue` is not negative and does not exceed $100 billion. This limit is designed to catch typos.
Formula:	`OR( AnnualRevenue < 0, AnnualRevenue > 100000000000 )`
Error Message:	Annual Revenue cannot exceed 100 billion.
Error Location:	**Annual Revenue**

Number Validation Rules

Time Cards Must Total 40 Hours

Description:	Ensures that users cannot save a time card record with more than 40 hours in a work week. This example requires five custom fields on your custom object, one for each day of work.
Formula:	`Monday_Hours__c + Tuesday_Hours__c + Wednesday_Hours__c + Thursday_Hours__c + Friday_Hours__c > 40`
Error Message:	Your total hours cannot exceed 40.
Error Location:	**Top of Page**

Number Cannot Be Negative

Description:	Validates that a custom field called `Hours Worked` is not a negative number.
Formula:	`Hours_Worked__c < 0`
Error Message:	Hours Worked cannot be less than zero.
Error Location:	**Hours Worked**

Number Must Be Even

Description:	Validates that a custom field called `Ark Passengers` is a non-negative even number.
Formula:	`OR( Ark_Passengers__c < 0, MOD( Ark_Passengers__c, 2) <> 0 )`
Error Message:	Ark Passengers must be a positive even number.
Error Location:	**Ark Passengers**

Number Must Be Odd

Description:	Validates that a custom field called `Socks Found` is a non-negative odd number.
Formula:	`OR( Socks_Found__c < 0, MOD( Socks_Found__c, 2) = 0 )`
Error Message:	Socks Found must be an odd number.
Error Location:	**Socks Found**

Number Must Be a Multiple of Five

Description:	Validates that a custom field called `Multiple of 5` is a multiple of five.
Formula:	`MOD( Multiple_of_5__c, 5) <> 0`
Error Message:	Number must be a multiple of five.
Error Location:	**Multiple of 5**

Number Must Be an Integer

Description:	Validates that a custom field called `My Integer` is an integer.
Formula:	`FLOOR( My_Integer__c) <> My_Integer__c`
Error Message:	This field must be an integer.
Error Location:	**My Integer**

Number Must Be Between -50 and 50

Description:	Validates that a custom field called `Volume` is between -50 and 50.
Formula:	`ABS( Volume__c) > 50`
Error Message:	Volume must be between -50 and 50.
Error Location:	**Volume**

Number Range Validation

Description:	Validates that the range between two custom fields, `Salary Min` and `Salary Max`, is no greater than $20,000.
Formula:	`(Salary_Max__c - Salary_Min__c) > 20000`
Error Message:	Salary range must be within $20,000. Adjust the Salary Max or Salary Min values.
Error Location:	**Salary Max**

Percentage Must Be Between Zero and 100

Description:	Validates that a custom field called `Mix Pct` is between 0 and 100%. Note that percent fields are expressed divided by 100 in formulas (100% is expressed as 1; 50% is expressed as 0.5).

Formula:	`OR(`
	`  Mix_Pct__c > 1.0,`
	`  Mix_Pct__c < 0.0`
	`)`

Error Message:	Mix Pct must be between 0 and 100%.
Error Location:	**Mix Pct**

Contact Validation Rules

Mailing Address Fields Are Required

Description:	Validates that the contact `Mailing Street`, `Mailing City`, and `Mailing Country` are provided.
Formula:	`OR( LEN( MailingStreet ) = 0, LEN( MailingCity ) = 0, LEN( MailingCountry ) = 0 )`
Error Message:	Mailing Street, City, and Country are required.
Error Location:	**Top of Page**

Mailing Street Is Required

Description:	Validates that the contact `Mailing Street` is provided.
Formula:	`LEN( MailingStreet ) = 0`
Error Message:	Mailing Street is required.
Error Location:	**Mailing Street**

Mailing Zip Code

Description:	Validates that the contact `Mailing Zip/Postal Code` is in 99999 or 99999-9999 format if `Mailing Country` is USA or blank.
Formula:	`OR(AND(OR(MailingCountry = "USA", LEN(MailingCountry) = 0), LEN(MailingPostalCode) <>5, LEN(MailingPostalCode) <> 10), NOT(CONTAINS("0123456789", LEFT(MailingPostalCode, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 2, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 3, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 4, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 5, 1))), AND(LEN(MailingPostalCode) = 10, OR(MID(MailingPostalCode , 6, 1) <> "-", NOT(CONTAINS("0123456789", MID(MailingPostalCode , 7, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 8, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 9, 1))), NOT(CONTAINS("0123456789", MID(MailingPostalCode , 10, 1))))))`
Error Message:	Zip code must be in 99999 or 99999-9999 format.
Error Location:	**Mailing Zip/Postal Code**

Phone Number Has International Format

Description:	Validates that the `Phone` number begins with a plus sign (+) for country code. Note that this validation rule conflicts with the ten-digit rule.
Formula:	`LEFT(Phone, 1) <> "+"`
Error Message:	Phone number must begin with + (country code).
Error Location:	**Phone**

US Phone Number Has Ten Digits

Description:	Validates that the `Phone` number is in (999) 999-9999 format. This works by using the SUBSTITUTE function to strip off all the formatting characters like parentheses, dashes, and slashes and confirming the length of the number is ten digits.

Formula:	`AND(`
	`  MailingCountry = "USA",`
	`  LEN(`
	`  SUBSTITUTE(SUBSTITUTE(SUBSTITUTE(SUBSTITUTE( SUBSTITUTE(`
	`SUBSTITUTE( Phone , "(", ""), ")", ""), "-",""),"`
	`",""),".",""),"/",""")) <> 10`
	`)`

Error Message:	US phone numbers should be in this format: (999) 999-9999.
Error Location:	**Phone**

Date Validation Rules

Date Must Be a Weekday

Description:	Validates that the value of a custom date field is a weekday (not Saturday or Sunday) .

Formula:	`CASE( MOD( My_Date__c - DATE(1900, 1, 7), 7),`
	`0, 0,`
	`6, 0,`
	`1 ) = 0`

Error Message:	Date must be a weekday.
Error Location:	`My Date`

Date Must Be a Weekend Day

Description:	Validates that the value of a custom date field is a Saturday or Sunday

Formula:	`CASE( MOD( My_Date__c - DATE(1900, 1, 7), 7),`
	`0, 1,`
	`6, 1,`
	`0 ) = 0`

Error Message:	Date must be a weekend day.
Error Location:	`My Date`

Date Must Be in the Current Month

Description:	Validates that a custom date field contains a date within the current month and year.

Formula:	`OR (`
	`YEAR( My_Date__c ) <> YEAR ( TODAY() ),`
	`MONTH( My_Date__c ) <> MONTH ( TODAY() )`
	`)`

Error Message:	Date must be in the current month.
Error Location:	`My Date`

Date Must Be in the Current Year

Description:	Validates that a custom date field contains a date within the current year.
Formula:	`YEAR( My_Date__c ) <> YEAR ( TODAY() )`
Error Message:	Date must be in the current year.
Error Location:	`My Date`

Date Must Be the Last Day of the Month

Description:	Validates whether a custom field called `My Date` is the last day of the month. To do this, it determines the date of the first day of the next month and then subtracts 1 day. It includes special case logic for December.

Formula:	`DAY(My_Date__c) <>`
	`IF(Month(My_Date__c)=12, 31,`
	`DAY(DATE(YEAR(My_Date__c),MONTH(My_Date__c)+1,1) - 1))`

Error Message:	Date must be the last day of the month.
Error Location:	**My Date**

Date Must Be Within One Year of Today

Description:	Validates whether a custom field called `Follow-Up Date` is within one year of today's date. This example assumes a 365 day year. (It does not handle leap years.)
Formula:	`Followup_Date__c - TODAY() > 365`
Error Message:	Follow-Up Date must be within one year of today.
Error Location:	**Follow-Up Date**

Day of Month Cannot Be Greater Than 15

Description:	Validates that a custom field called `Begin Date` contains a date in the first 15 days of the specified month.
Formula:	`DAY( Begin_Date__c ) > 15`
Error Message:	Begin Date cannot be after the 15th day of month.
Error Location:	**Begin Date**

End Date Cannot Be Before Begin Date

Description:	Validates that a custom field called `End Date` does not come before another custom field called `Begin Date`.
Formula:	`Begin_Date__c > End_Date__c`
Error Message:	End Date cannot be before Begin Date.
Error Location:	**Begin Date**

Expiration Date Cannot Be Before Close Date

Description:	Validates that a custom field called `Expiration Date` does not come before `Close Date`.
Formula:	`Expiration_Date__c < CloseDate`
Error Message:	Expiration Date cannot be before Close Date.
Error Location:	**Expiration Date**

Opportunity Management Validation Rules

Conditionally-Required Field Based on Opportunity Stage

Description:	Validates that a custom field called `Delivery Date` is provided if an opportunity has advanced to the Closed Won or Negotiation/Review stage.

Formula:	`AND (`
	`  OR (`
	`  ISPICKVAL( StageName, "Closed Won"),`
	`  ISPICKVAL( StageName, "Negotiation/Review")),`
	`ISNULL( Delivery_Date__c )`
	`)`

Error Message:	Delivery Date is required for this stage.
Error Location:	**Delivery Date**

Close Date Cannot Be Prior to Current Month

Description:	Validates that the `Close Date` of an opportunity is not within a month prior to the current month. Note the use of ISNEW and ISCHANGED in this formula to ensure the condition is only checked when the opportunity is being created or the `Close Date` field is modified subsequently.

Formula:	`AND(`
	`  OR (`
	`  ISNEW(),`
	`  ISCHANGED( CloseDate )),`
	`  CloseDate < DATE( YEAR(TODAY()), MONTH(TODAY()), 1) )`

Error Message:	Close Date cannot be prior to current month.
Error Location:	**Close Date**

Close Date Must Be a Future Date

Description:	Ensures that users do not change the `Close Date` of an opportunity to a day in the past.
Formula:	`CloseDate < TODAY()`
Error Message:	Close Date cannot be a day in the past.
Error Location:	**Close Date**

Discounts on Opportunities

Description:	Validates that a custom discount percent field is between 0 and 40%.
Formula:	`OR(Discount_Rate__c < 0, Discount_Rate__c > 0.40)`
Error Message:	The Discount Rate must not exceed 40%.
Error Location:	**Discount Rate**

High-Value Opportunity Must Be Approved Before Closed

Description:	Opportunities with amounts greater than $50,000 require that a custom checkbox field called `Approved` is checked in order to change the stage to Closed Won or Closed Lost. To automate this, set field-level security on the `Approved` checkbox so that it can only be checked via a custom approval process. (Enterprise Edition or Unlimited Edition)

Formula:	`AND(`
	`  OR(`
	`  ISPICKVAL(StageName ,"Closed Won"),`
	`  ISPICKVAL( StageName ,"Closed Lost")) ,`
	`(Amount > 50000),`
	`NOT(ISPICKVAL( Approval_Status__c ,"Approved") ) )`

Error Message:	All high-value opportunities must be approved for closure. Click the Request Close button.
Error Location:	**Top of Page**

Opportunity Amount Cannot Exceed $10 Million

Description:	Validates that opportunity `Amount` is positive and no more than $10 million. This limit is designed to catch typos.

Formula:	`OR(`
	`  Amount < 0,`
	`  Amount > 10000000`
	`)`

Error Message:	Amount cannot exceed $10 million.
Error Location:	**Amount**

Opportunity Check for Products

Description:	Validates that an opportunity has at least one opportunity product before users can save a change to an opportunity.
Formula:	`NOT(OR(ISNEW(),HasOpportunityLineItem))`
Error Message:	You must add products to this opportunity before saving.
Error Location:	**Top of Page**

Opportunity Must Have Products if Beyond "Needs Analysis" Stage

Description:	Validates that an opportunity has opportunity products before the `Stage` can move beyond Needs Analysis.

Formula:	`AND (`
	`  CASE( StageName,`
	`  "Value Proposition", 1,`
	`  "Id. Decision Makers", 1,`
	`  "Perception Analysis", 1,`
	`  "Proposal/Price Quote", 1,`
	`  "Negotiation/Review", 1,`
	`  "Closed Won", 1,`
	`  0) = 1,`
	`  NOT(HasOpportunityLineItem)`
	`)`

Error Message:	Opportunity products are required to advance beyond the Needs Analysis stage.
Error Location:	**Top of Page**

Opportunity Name Format

Description:	Validates that an opportunity contains a hyphen as a way of enforcing an "[Account] – [Amount]" opportunity naming convention.
Formula:	`FIND( " - ", Name ) = 0`
Error Message:	Opportunity Name should use "[Account] - [Amount]" format.
Error Location:	**Opportunity Name**

Prevent Sales Reps from Moving Opportunity Stage Backwards

Description:	Prevent sales reps from changing opportunity `Stage` "backwards" to specific values, once they have accepted the opportunity via a custom approval process. The approval process sets the custom `Accepted Flag` checkbox to True.

Formula:	`AND(`
	`  Accepted_Flag__c,`
	`  OR ( ISPICKVAL( StageName, "Stage 1"), ISPICKVAL( StageName, "Stage 2"))`
	`)`

Error Message:	Invalid stage for accepted opportunity.
Error Location:	**Stage**

Probability Must Be 100% for Won Opportunities

Description:	Validates that the probability of a won opportunity is properly set to 100%. This is useful for data cleanliness and reporting purposes.

Formula:	`AND (`
	`  ISPICKVAL( StageName, "Closed Won"),`
	`  Probability <> 1)`

Error Message:	Probability must be 100% for won opportunities.
Error Location:	**Probability**

Probability Must Be Zero for Lost Opportunities

Description:	Validates that the probability of a lost opportunity is properly set to zero. This is useful for data cleanliness and reporting purposes.

Formula:	`AND (`
	`  ISPICKVAL( StageName, "Closed Lost"),`
	`  Probability <> 0)`

Error Message:	Probability must be 0% for lost opportunities.
Error Location:	**Probability**

Project Start Date

Description:	Validates that a field is conditionally required based on the values of other fields. Use this validation formula to ensure that users include a `Project Start Date` for an opportunity that is closed/won.
Formula:	`AND(ISPICKVAL( StageName , "Closed Won"),` `  ISNULL(Project_Start_Date__c ))`
Error Message:	Project start date is required for won opportunities.
Error Location:	`Project Start Date`

Service & Support Validation Rules

Conditionally Require Description When Case Reason is "Other"

Description:	Validates that a custom field called `Other Reason` contains a value if a case has a `Case Reason` of "Other."
Formula:	`AND( ISPICKVAL( Reason, "Other" ), Other_Reason__c = "" )`
Error Message:	Description of Other Reason is required.
Error Location:	**Other Reason**

Prevent Open Cases from Being Reset to New

Description:	If a case is already open, prevents the `Status` from being changed back to "New."
Formula:	`AND( ISCHANGED( Status ), NOT(ISPICKVAL(PRIORVALUE( Status ), "New")), ISPICKVAL( Status, "New") )`
Error Message:	Open case Status cannot be reset to New.
Error Location:	**Status**

Restrict Status of Re-Opened Cases

Description:	Validates that the case `Status` is "Re-opened" when a closed case is opened again.
Formula:	`AND( ISCHANGED( Status ), OR( ISPICKVAL(PRIORVALUE( Status ), "Closed"), ISPICKVAL(PRIORVALUE( Status ), "Closed in SSP")), NOT( ISPICKVAL( Status, "Re-Opened")) )`
Error Message:	Closed case can only be changed to "Re-opened."
Error Location:	**Status**

User, Role, and Profile Validation Rules

Discount Percent Does Not Exceed Role-Based Limit

Description:	Validates that a custom field on opportunities called `Discount Percent` does not exceed a maximum value that varies depending on the user's role. The default maximum is 15%.
Formula:	`Discount_Percent__c > CASE( $UserRole.Name, "CEO", 0.95, "SVP, Sales & Marketing", 0.8, "VP, International Sales", 0.5, "VP, North American Sales", 0.5, "Director, International Sales", 0.3, "Director, Channel Sales", 0.2, 0.15)`
Error Message:	Discount (%) exceeds limit allowed for your role.
Error Location:	**Discount Percent**

Expense Amount Does Not Exceed User's Max Allowed Expense

Description:	Validates a custom field called `Expense Amount` against a custom user field called `Max Allowed Expense`.
Formula:	`Expense_Amount__c > $User.Max_Allowed_Expense__c`
Error Message:	Amount cannot exceed your maximum allowed expense.
Error Location:	**Expense Amount**

Only Record Owner Can Change Field

Description:	Ensures that only the record owner can make changes to a custom field called `Personal Goal`.
Formula:	`AND( ISCHANGED( Personal_Goal__c ), Owner <> $User.Id )`
Error Message:	Only record owner can change Personal Goal.
Error Location:	**Personal Goal**

Only Record Owner or Administrator Can Change Field

Description:	Ensures that only the record owner or users who have a custom profile of "Custom: System Admin" can make changes to a custom field called `Personal Goal`.
Formula:	`AND( ISCHANGED( Personal_Goal__c ), Owner <> $User.Id, $Profile.Name <> "Custom: System Admin" )`
Error Message:	Only record owner or administrator can change Personal Goal.
Error Location:	**Personal Goal**

Opportunity Close Date Can Only Be Back-Dated by Administrator

Description:	Validates that the `Close Date` of an opportunity does not fall prior to the current month, except for users who have a custom profile called "Custom: System Admin."
Formula:	`AND( OR ( ISNEW(), ISCHANGED( CloseDate )), CloseDate < DATE( YEAR(TODAY()), MONTH(TODAY()), 1), $Profile.Name <> "Custom: System Admin" )`
Error Message:	Close Date cannot be prior to current month.
Error Location:	**Close Date**

Other Validation Rules

Allow Number to Be Increased but Not Decreased

Description:	Allows a custom field called `Commit Amount` to be increased but not decreased after initial creation. This rule uses the PRIORVALUE() function to compare the updated value of the field to its value prior to update.
Formula:	`PRIORVALUE(Commit_Amount__c) > Commit_Amount__c`
Error Message:	Commit Amount cannot be decreased.
Error Location:	**Commit Amount**

Force Users to Check "I Accept Terms" to Enter Certain Values

Description:	Uses a checkbox labeled "I accept terms" to force the user to select a checkbox in order to enter a value called `Number of Days` that exceeds their Paid Time Off (PTO) balance available.

Formula:	`AND(`
	`  NOT( I_accept_terms__c  ),`
	`  Number_of_Days__c > $User.PTO_Balance__c`
	`)`

Error Message:	Request will cause a negative PTO balance. You must accept Negative PTO Balance terms.
Error Location:	**I accept terms**

Prohibit Changes to a Field After It Has been Saved

Description:	Prevents users from changing a custom field called `Guaranteed Rate` after it has been saved initially.

Formula:	`AND(`
	`  NOT( ISNEW() ),`
	`  ISCHANGED( Guaranteed_Rate__c )`
	`)`

Error Message:	Guaranteed Rate cannot be changed.
Error Location:	**Guaranteed Rate**

Social Security Number Format

Description:	Validates that a custom text field called `SSN` is formatted in 999-99-9999 number format (if it is not blank).

Formula:	`NOT(`
	`OR(LEN(SSN__c) = 0,`
	`AND(`
	`  LEN( SSN__c ) = 11,`
	`  CONTAINS("0123456789", LEFT( SSN__c, 1)),`
	`  CONTAINS("0123456789",  MID( SSN__c, 2, 1)),`
	`  CONTAINS("0123456789",  MID( SSN__c, 3, 1)),`
	`  MID( SSN__c, 4, 1) = "-",`
	`  CONTAINS("0123456789",  MID( SSN__c, 5, 1)),`
	`  CONTAINS("0123456789",  MID( SSN__c, 6, 1)),`
	`  MID( SSN__c, 7, 1) = "-",`
	`  CONTAINS("0123456789",  MID( SSN__c, 8, 1)),`
	`  CONTAINS("0123456789",  MID( SSN__c, 9, 1)),`
	`  CONTAINS("0123456789",  MID( SSN__c, 10, 1)),`
	`  CONTAINS("0123456789",  MID( SSN__c, 11, 1))`
	`)))`

Error Message:	SSN must be in this format: 999-99-9999.
Error Location:	**SSN**

Valid Currency

Description:	Validates selected currency against an explicit subset of active currencies in your organization using the `Currency` picklist. Use this example if you only allow some of the active currencies in your organization to be applied to certain types of records.
Formula:	`CASE(CurrencyIsoCode, "USD", 1, "EUR", 1, "GBP", 1, "JPY", 1, 0) = 0`
Error Message:	Currency must be USD, EUR, GBP, or JPY.
Error Location:	**Currency**

Website Extension

Description:	Validates a custom field called `Web Site` to ensure its last four characters are in an explicit set of valid website extensions.
Formula:	`AND( RIGHT( Web_Site__c, 4) <> ".COM", RIGHT( Web_Site__c, 4) <> ".com", RIGHT( Web_Site__c, 4) <> ".ORG", RIGHT( Web_Site__c, 4) <> ".org", RIGHT( Web_Site__c, 4) <> ".NET", RIGHT( Web_Site__c, 4) <> ".net", RIGHT( Web_Site__c, 6) <> ".CO.UK", RIGHT( Web_Site__c, 6) <> ".co.uk" )`
Error Message:	Web Site must have an extension of .com, .org, .net, or .co.uk.
Error Location:	**Web Site**

Packaging and Upgrading

Available in: **Team**, **Professional**, **Enterprise**, **Unlimited**, and **Developer** Editions

AppExchange packaging enhancements and upgrading capabilities give developers access to the most robust development platform in the industry. Now, Apex developers can share apps rapidly, offer upgrades, and track their customer's licenses and installed versions.

Key capabilities of AppExchange packaging and upgrading:

- Upgradeable packages, referred to as "managed packages" in Salesforce
- Namespaces that uniquely identify a developer's components
- License management app
- Packageable extensions
- Additional packageable components

Implementation Tips

- You must use a Developer Edition organization to create and work with a managed package.
- A Developer Edition organization can contain a single managed package and many unmanaged packages.
- Before converting an unmanaged package to managed, enable your organization to create managed packages. Follow the instructions in "Enabling Managed Packages for Your Organization" in the Salesforce online help.
- All packages are unmanaged unless otherwise indicated by one of the following managed icons:
  - Managed - Beta
  - Managed - Released
  - Managed - Installed
- You can offer beta versions of a managed package to a small sampling of your users if you are still developing the components within the package but want to allow beta testers to install it and provide feedback. For more information on how beta versions of managed packages behave, see "Using Beta Versions of Managed Packages" in the Salesforce online help.
- Installers of managed packages are not able to downgrade to earlier versions.
- When you release a managed package, meaning it is uploaded without the `Beta` checkbox selected, the properties of its components change to prevent developers and installers from making harmful changes. For a list of each component type and these properties, see "Properties of Managed Components" in the Salesforce online help. If you do not want to offer upgrades to your package, consider keeping it unmanaged.
- Some components in a released managed package are always editable. For a list of these attributes, see "Properties of Managed Components" in the Salesforce online help.

Best Practices

- You can use the same license management organization to manage many different managed packages in different Developer Edition organizations. A license management organization is any Enterprise, Unlimited, or Developer Edition organization that has installed the free License Management App from the AppExchange.
- Convert your unmanaged package to a managed package if you plan on developing new versions of your app, intend to manage licenses, or want to ensure your installers never have namespace conflicts.
- Create your package before changing your developer settings.
- If you requested a unique four-character ID from salesforce.com prior to Winter '07, you still need to register a namespace prefix. Existing components that include your unique four-character ID will have the namespace prefix automatically appended to their API name. For example, if you previously used the API name abcd.Expense__c to access the Expense object from the API and you register the same prefix using the new process, use abcd__abcd.Expense__c to access this object from the API going forward.
- If you own more than one managed package in different Developer Edition organizations, choose a namespace prefix that identifies both your name and the name of the package. For example, mbenioffApp1, mbenioffApp2, and mbenioffApp3 would be good namespace prefixes for all the apps that Marc Benioff owns.
- If you are planning to use the same License Management App for more than one managed package, make sure you name the packages and versions uniquely so that you can tell which installs are for which package.
- Choose a namespace prefix that is short.

Setting Up AppExchange Upgrades

About Managed Packages

Managed packages are AppExchange packages that can be upgraded in the installer's organization. They differ from unmanaged packages in that some components are locked, ensuring a smoother upgrade process. "Unmanaged Packages" in the Salesforce online help do not include locked components.

Managed packages differ from unmanaged packages in many other ways. Before creating managed packages, here are a few things to consider:

- You must use a Developer Edition organization to create and work with a managed package.
- A Developer Edition organization can contain a single managed package and many unmanaged packages.
- Before converting an unmanaged package to managed, enable your organization to create managed packages. Follow the instructions in "Enabling Managed Packages for Your Organization" in the Salesforce online help.
- All packages are unmanaged unless otherwise indicated by one of the following managed icons:
  - Managed - Beta
  - Managed - Released
  - Managed - Installed
- You can offer beta versions of a managed package to a small sampling of your users if you are still developing the components within the package but want to allow beta testers to install it and provide feedback. For more information on how beta versions of managed packages behave, see "Using Beta Versions of Managed Packages" in the Salesforce online help.
- Installers of managed packages are not able to downgrade to earlier versions.
- When you release a managed package, meaning it is uploaded without the `Beta` checkbox selected, the properties of its components change to prevent developers and installers from making harmful changes. For a list of each component type and these properties, see "Properties of Managed Components" in the Salesforce online help. If you do not want to offer upgrades to your package, consider keeping it unmanaged.
- Some components in a released managed package are always editable. For a list of these attributes, see "Properties of Managed Components" in the Salesforce online help.

Tip: The Managed - Released or Managed - Installed icon on any detail or edit page indicates that the item is included in a managed package and may not be editable. Click **Display More Information** to view which attributes you can edit. For a list of packageable items and their editable attributes, see "Properties of Managed Components" in the Salesforce online help.

Enabling Managed Packages for Your Organization

User Permissions Needed	
To enable managed packages:	"Customize Application"
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

Creating a managed package is just as easy as creating an unmanaged package, but it requires a few customizations in your organization first. The only requirement for enabling your Salesforce organization to create managed packages is that you are using a Developer Edition organization.

To enable your organization for managed packages:

- Review the information about managed packages before determining if this is the right type of package for your app.
- Install the License Management App from www.appexchange.com. Search for "License Management App" to locate it. The License Management App tracks information about each user who installs your app. It allows you to track what users have which version, giving you a means of distributing information about upgrades.

  The License Management App can be installed in any Salesforce organization except a Personal, Team, or Professional Edition organization and does not need to be the same Salesforce organization that you use to create or upload the package,

although it can be. You can also use the same License Management App to manage an unlimited number of your managed packages in different Developer Edition organizations.

- Configure your developer settings. Your developer settings specify your namespace prefix, the Salesforce organization where you install the License Management App, and the unmanaged package you want to convert into a managed package.

Planning the Release of Managed Packages

Releasing an AppExchange app is similar to releasing any other program in software development. You may want to roll it out in iterations to ensure each component functions as planned. You may even have beta testers who have offered to install an early version of your app and provide feedback.

Once you release an app by publishing it on the AppExchange directory, anyone can install it. So, plan your release carefully. Review the states defined below to familiarize yourself with the release process. Salesforce automatically applies the appropriate state to your package and components depending on the upload settings you choose and where it is in the release process.

State	Description
Unmanaged	The package has not been converted into a managed package or the component has not been added to a managed package. Note that a component that is "Managed - Beta" can become "Unmanaged" if it is removed from a managed package. All packages are unmanaged unless otherwise indicated by one of the managed icons below.
Managed - Beta	The package or component was created in the current Salesforce organization and is managed, but it is not released because of one of these reasons: • It has not been uploaded. • It has been uploaded with `Beta` selected. This option prevents it from being published, publicly available on the AppExchange. The developer can still edit any component but the installer may not be able to depending on the "Properties of Managed Components" in the Salesforce online help.
Managed - Released	The package or component was created in the current Salesforce organization and is managed. It is also uploaded with `Beta` not selected, indicating that it can be published on the AppExchange and publicly available. Note that once you have moved a package to this state, some properties of the components are no longer editable for both the developer and installer. For a list of these properties in Managed - Released packages, see "Properties of Managed Components" in the Salesforce online help.
Managed - Installed	The package or component was installed from another Salesforce organization but is managed.

Using Beta Versions of Managed Packages

A beta package is an early version of a managed package that is uploaded to the AppExchange with a `Beta` checkbox selected. The purpose of a beta package is for the developer to share it with a sampling of the intended audience to test it, gather

feedback, and enhance it before releasing it to a wider audience. Before installing a beta version of a managed package, review the following notes:

- Beta versions of managed packages are indicated in the developer's organization by the following icon: Managed - Beta
- Beta versions of managed packages are indicated by the same icon as managed released packages in the installer's organization: Managed - Installed
- Users can install beta packages in Salesforce Sandbox or Developer Edition organizations only.
- The properties of managed components apply to installers of beta versions of a managed package. However, these restrictions do not apply to developers. Because developers beta test packages to get feedback, uncover critical feature gaps, and fix bugs, the components of a beta managed package are still editable in the developer's organization until the developer uploads the package without the `Beta` checkbox selected.
- When a developer uploads a managed package without selecting the `Beta` checkbox, that package is no longer beta and can be registered and published on the AppExchange.
- Beta versions of managed packages are not upgradeable. Because developers can still edit the components of a beta package, the post-beta version may not be compatible with the copy a user has installed. We recommend attempting to upgrade from a beta version of a managed package first. If that fails, uninstall the beta package and install the managed released version.

Properties of Managed Components

The components in a managed package behave differently than those in an unmanaged package at different points in the release process. For example, an installer cannot change certain properties of managed components in any package that is in a Managed - Installed state, regardless of whether it is beta. Likewise, the developer cannot change certain properties of managed components in any package that is in a Managed - Released state. However, Managed - Beta components have the same properties as unmanaged components in the developer's organization. Developers should determine when the right time is to make a beta package Managed - Released because doing so restricts the properties of each component within it. To understand each state of a managed package, see "Planning the Release of Managed Packages" in the Salesforce online help. Components in a managed packaged have one of the following properties:

- Editable but not upgradeable.

  This means that components are editable in both the developer's and installer's organization. Editable components are not upgradeable. Salesforce remembers which editable components an installer has deleted so that it does not reinstall unwanted components. For example, the installer can delete a document that was included in a managed package and upgrades to that package that still include the document will not get installed again. Any changes the installer makes are also not overwritten during upgrades. Likewise, the publisher can make changes to documents and even delete them but that does not affect the installed users. Each installer can have different versions of these items because new installers get the component with the latest attributes but previous installers do not get their version of the component updated.

- Restricted in the installer's and publisher's organization.

  A restricted component may have some attributes that are editable in the installer's organization but other attributes that are editable in the publisher's organization.

- Locked in both the developer's and installer's organization; this ensures that the components can be upgraded smoothly.

Developers can always add additional components to a managed package regardless of its state with a few exceptions:

- Once a managed package is Managed - Released, the developer can make changes to the profile settings but installers will not get these changes when upgrading. We recommend contacting installers to ask them to make important profile changes manually when they upgrade.
- Developers can add universally required custom fields to managed packages as long as they have default values.
- Developers cannot add auto number fields to Managed - Released packages.

Before releasing a managed package, review the properties of each managed released component in the installer's and publisher's organizations.

Component Type	Property in Installer's Organization	Property in Developer's Organization
Custom apps	Can change the `Logo`, the order of tabs, which tabs are displayed, and the profiles that can view the app. Can also designate whether to overwrite users' custom app customizations.	Can change the `Label` or `Description`.
Custom buttons	Can change window open properties.	Can change `Content Source`, `Behavior`, `Label`, `Description`, `URL`, `Link Encoding`, and `s-control`.
Custom links	Can change window open properties.	Can change `Content Source`, `Behavior`, `Label`, `Description`, `URL`, `Link Encoding`, `s-control`, and `Display Type`.
Custom fields and relationships (on custom objects)	Can change picklist sorting and values.	Can change the `Label`, `Description`, auto-number `Display Format`, `Related List Label`, default value, and formula.
Custom fields (on standard objects)	Can change `Restricted Admin Field`.	Can change the `Label`, `Description`, auto-number `Display Format`, `Related List Label`, default value, and formula.
Custom objects	Can change sharing settings, `Deployment Status` and `Track Field History`.	Can change the `Label`, `Description`, `Deployment Status`, and `Record Name`. Can only delete when the package is Managed - Beta.
Custom reports	Editable but not upgradeable.	Editable but not upgradeable.
Custom s-controls	Locked	Can change `Label`, `Description`, `Encoding`, `HTML Body`, `Filename`, and `Content`. Can only delete the s-control or change the source when the package is Managed - Beta.
Custom tabs	Can change `Tab Style` and icon.	Can change `Label`, `Description`, `Encoding`, and `Splash Page Custom Link`.
Dashboards	Editable but not upgradeable.	Editable but not upgradeable.
Documents	Editable but not upgradeable.	Editable but not upgradeable.
Email templates (including letterheads)	Locked	Locked
Email template attachments	Editable but not upgradeable.	Editable but not upgradeable.

Component Type	Property in Installer's Organization	Property in Developer's Organization
Folders	Can change `Public Folder Access` and sharing settings.	Locked Can only delete or change `Public Folder Access` when the package is Managed - Beta.
Letterheads	Locked	Can change `Description`, `Name`, whether it is active, and any attribute available when you click **Edit Letterhead**.
Page layouts (on custom objects)	Editable but not upgradeable.	Editable but not upgradeable.
Profiles	Editable but not upgradeable.	Editable but not upgradeable.
List views (only public list views on custom objects)	Editable but not upgradeable.	Editable but not upgradeable.
Record types (on custom objects)	Editable but not upgradeable.	Editable but not upgradeable.
Related list layouts	Editable but not upgradeable.	Editable but not upgradeable.
Search layouts	Editable but not upgradeable.	Editable but not upgradeable.
Validation Rules (on custom objects)	Can change `Active` flag.	Can change `Description`, formula, `Error Message`, and `Error Location`. Can only delete or change the name when the package is Managed - Beta.
Web Tabs	Can change `Tab Style` and icon.	Can change `Tab Type` (URL or s-control), `Label`, `Description`, `URL`, `s-control`, `Encoding`, `Has Sidebar`, `Height`, and `Splash Page Custom Link`.

Enabling Managed Packages for Your Organization

User Permissions Needed	
To enable managed packages:	"Customize Application"
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

Creating a managed package is just as easy as creating an unmanaged package, but it requires a few customizations in your organization first. The only requirement for enabling your Salesforce organization to create managed packages is that you are using a Developer Edition organization.

To enable your organization for managed packages:

- Review the information about managed packages before determining if this is the right type of package for your app.

- Install the License Management App from www.appexchange.com. Search for "License Management App" to locate it. The License Management App tracks information about each user who installs your app. It allows you to track what users have which version, giving you a means of distributing information about upgrades.

  The License Management App can be installed in any Salesforce organization except a Personal, Team, or Professional Edition organization and does not need to be the same Salesforce organization that you use to create or upload the package, although it can be. You can also use the same License Management App to manage an unlimited number of your managed packages in different Developer Edition organizations.
- Configure your developer settings. Your developer settings specify your namespace prefix, the Salesforce organization where you install the License Management App, and the unmanaged package you want to convert into a managed package.

Configuring Your Developer Settings

User Permissions Needed	
To configure developer settings:	"Customize Application"
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

The developer settings in a Developer Edition organization allow you to create a single managed package and upload that package to the AppExchange directory so other users can install and upgrade the package in their organization. After configuring your developer settings the first time, you can no longer modify them.

Note: Regardless of the developer settings, you can always create an unlimited number of unmanaged packages.

Before configuring your developer settings, review the requirements and steps in "Enabling Managed Packages for Your Organization" in the Salesforce online help.

To configure your developer settings:

1. Click **Setup ➤ Exchange ➤ Shared Apps**.
2. Click **Edit**.

   Note: This button does not appear if you have already configured your developer settings.
3. Review the selections necessary to configure developer settings, and click **Continue**.
4. Register a namespace prefix.
5. Choose the package you want to convert to a managed package. If you do not yet have a package to convert, leave this selection blank and update it later.
6. Specify a license management organization. If you have not yet installed the License Management App, select `Do this later`.
7. Click **Review My Selections**.
8. Click **Save**. Salesforce automatically prepends your namespace prefix, followed by two underscores ("__"), to all unique component names in your Salesforce organization. A unique component is one that requires a name that no other component has within Salesforce, such as custom objects, custom fields, custom links, s-controls, and validation rules.

Registering a Namespace Prefix

User Permissions Needed	
To configure developer settings:	"Customize Application"
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

A namespace prefix is a one to 15-character alphanumeric identifier that distinguishes your package and its contents from packages of other developers on the AppExchange. Your namespace prefix must be globally unique across all Salesforce organizations. It keeps your managed package under your control exclusively.

Salesforce automatically prepends your namespace prefix, followed by two underscores ("__"), to all unique component names in your Salesforce organization. A unique component is one that requires a name that no other component has within Salesforce, such as custom objects, custom fields, custom links, s-controls, and validation rules. For example, if your namespace prefix is abc and your managed package contains a custom object with the API name, Expense__c, use the API name abc__Expense__c to access this object using the API.

Caution: S-controls that are stored in the s-control library or the Documents tab that do not use the Apex API will still function properly after you register a namespace prefix. However, s-controls stored outside of your organization or s-controls that use the Apex API to call Salesforce may require some fine tuning.

Your namespace prefix must:

- Begin with a letter
- Contain one to 15 alphanumeric characters. We recommend a shorter length for convenience.
- Not contain two consecutive underscores

To register a namespace prefix:

1. From the developer settings configuration page, enter a requested namespace prefix in the space provided.
2. Click **Check Availability** to determine if it is already in use.
3. Repeat if the namespace prefix you entered is not available.
4. Complete the remaining developer settings as needed.

Note: If you requested a unique four-character ID from salesforce.com prior to Winter '07, you still need to register a namespace prefix. Existing components that include your unique four-character ID will have the namespace prefix automatically appended to their API name. For example, if you previously used the API name abcd.Expense__c to access the Expense object from the API and you register the same prefix using the new process, use abcd__abcd.Expense__c to access this object from the API going forward.

Specifying a License Management Organization

User Permissions Needed	
To configure developer settings:	"Customize Application"
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

A license management organization is a Salesforce organization that you use to track all Salesforce subscribers who install your managed package. The license management organization receives notification (in the form of a lead record) when a subscriber installs or uninstalls your package and tracks each package upload on the AppExchange directory.

Your license management organization can be any Salesforce Enterprise, Unlimited, or Developer Edition organization that has installed the free License Management App from the AppExchange directory.

Note: Ensure that there is sufficient free space for the LMA app and multiple license records in the organization that you will use as the LMO. We recommend that you install the LMA in an Enterprise edition or Unlimited edition organization to avoid storage limit errors. If you choose to use a Developer edition organization as your LMO, we recommend using it only for the LMO and not for developing apps.

Caution: Once you specify a license management organization, you are not able to change it.

From the developer settings configuration page, specify a license management organization from one of the following options:

- `Make this Salesforce organization my license management organization.`

  Choose this option to make the Salesforce organization you are currently using the one that contains the License Management App and the one you use to store information about the Salesforce users who have installed your managed package. If you have not yet installed the License Management App, click the **Get It Now!** link to do so now.

- `Make a different Salesforce organization my license management organization.`

  Choose this option to make another Salesforce organization the one you use to install the License Management App and store information about the Salesforce users who have installed your managed package. Your license management organization can be any Salesforce organization, except a Personal, Team, or Professional Edition organization. Choosing this option requires the Salesforce username and password to the organization you select. To use a single Salesforce organization to manage multiple managed packages published from different Developer Edition organizations, select this option and enter the username and password for that Salesforce organization.

- `Make a third-party Salesforce organization my license management organization.`

  Choose this option to make another Salesforce organization install the License Management App and store information about the Salesforce users who have installed your package. Your license management organization can be any Salesforce organization, except a Personal, Team, or Professional Edition organization. This option allows you to enter the email address, not the Salesforce username, of a representative for a third party who can accept a license management request. Salesforce sends a license management request in email prompting this person to accept or reject the request.

- `Do this later.`

  Choose this option to skip this step and choose a license management organization at another time.

Note: The License Management App automatically adds a new user, License Manager, to any Salesforce organization that installs your managed package. This is a free user license and allows the License Management App to track which version is installed.

Publishing Upgrades to Managed Packages

User Permissions Needed	
To configure developer settings:	"Customize Application"
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

As a publisher, first ensure that your app is upgradeable by converting it to a managed package. Any changes you make to the components in a managed package are automatically included in subsequent uploads of that package.

To publish upgrades to a managed package:

1. Select the package from the list of packages available at **Setup ➤ Exchange ➤ Shared Apps**.
2. View the list of package items. Changes you have made to the items in this package are automatically included. If the changes reference additional items, those items are automatically included as well. To add new items, click **Add** to add them to the package manually.
3. Click **Upload to AppExchange** and upload it as usual.
4. When you receive an email with the link to the upload on the AppExchange directory, notify your installed users that the new version is ready. Use the list of installed users from the License Management App to distribute this information. The License Management App automatically stores the version number that your installers have in their organizations.

Publishing Extensions to Managed Packages

User Permissions Needed	
To create packages:	"Create AppExchange Packages"
To upload packages:	"Upload AppExchange Packages"

The community of developers, users, and visionaries building and publishing apps on the AppExchange directory is part of what makes Apex such a rich development platform. Use this community to build extensions to other apps and encourage them to build extensions to your apps.

An extension is any package, component, or set of components that adds to the functionality of a managed package. An extension requires that the base managed package is installed for it to work. For example, if you have built a recruiting app, an extension to this app might include a component for performing background checks on candidates.

To publish extensions to a managed package:

1. Install the base package in the Salesforce organization that you plan to use to upload the extension.
2. Build your extension components.
3. Create a new package and add your extension components. Salesforce automatically includes some related components. See "What is automatically included in a package?" in the Salesforce online help for more information.
4. Upload the new package that contains the extension components.
5. Proceed with the publishing process as usual:
   - "Create a test drive" in the Salesforce online help

     Note: If you are creating a test drive for an extension, Salesforce simply creates a test drive environment. After that, log in to the test drive environment and install both the base package and extension for your uploaded package.

   - "Register the extension" in the Salesforce online help
   - Go to www.appexchange.com for information on how to publish your app

Apex Mobile

Available in: **Unlimited** and **Developer** Editions

Available for an additional cost in: **Professional** and **Enterprise** Editions

The Winter '07 Apex Mobile release introduces Apex Mobile on Windows Mobile 5 selected devices. It also includes many new features and performance enhancements on the RIM BlackBerry and Palm Treo platforms.

For more detailed descriptions and screenshots, download the updated user guides from the Apex Mobile Administration Console or direct your users to their Self-Management Console.

About Apex Mobile

Apex Mobile on Windows Mobile 5

Winter '07 introduces the first release of Apex Mobile on the Windows Mobile 5 platform. The following features are now available:

- SFA Support - accounts, contacts, leads, opportunities, tasks, and events
- Custom objects and custom fields support
- Authentication workflow (Activation, Login, Verification, Change Password)
- Two-column view on all list screens with clickable column headers
- Record types and page layouts support
- Simple and advanced remote search capability
- Local find per object on the list screen
- New user interface
- Collapsible sections
- Lead conversion
- Directing users for support
- Auto-pin discovery
- Transport Connection Status clickable icon
- PIM Integration: place calls and send emails directly from a record in Apex Mobile. Built-in workflow gives you the option to log the activity.
- Password masking
- Dependent, multi-select, and combo picklists

Device Certifications

- Cingular (HTC) 8125
- Verizon/Vodafone Treo 700w
- Sprint Treo 700wx
- TIM I-mate JasJar
- Vodafone I-mate JasJar
- Wind I-mate JasJar
- 3 I-mate JasJar
- T-Mobile I-mate JasJar

Application Enhancements

Calendar User Interface

With Winter '07, Apex Mobile adds a new user interface to the Event tab. Salesforce events can now be viewed on Apex Mobile in day, week, month, or list view, allowing customers to easily navigate to the most relevant events.

- Click the '7' icon (or access via trackwheel) to read events in the week view. Click any date in that given week to view the events scheduled for that day.
- On the week or month view, a bold date indicates that one or more events are scheduled.
- Custom views into the local data can still be applied in conjunction with the day, week, month, or list view.

Change Record Ownership

Users can now change ownership of a record using the mobile device. From the view screen of the record, click the trackwheel and select **Change Owner**.

Note: Permissions are inherited directly from Salesforce; if you have permission to reassign a record to another user in the online user interface, you can via Apex Mobile as well.

Implementation Tips for Administrators

When reassigning a record to another user, the user list from which you select is compiled from the local list of users stored on the device. This list is built dynamically when the profile is run and queries automatically retrieve owners of all records in the mobile profile.

Thus, if a profile is set up to only retrieve records owned by that person, the user list may be empty. In this case, it is recommended that the administrator mobilize the User object, and write a query that retrieves the user records that the user (or group of users) assigned to this profile will most likely need to access.

Alternatively, the user could run a search for 'Users' and retrieve those user records to store locally.

General Enhancements for the RIM BlackBerry Platform

New Device Certifications

- United States – Cingular 7130c
- United States – SprintPCS 7130e
- United States – Cingular/AT&T 8700c
- United States – T-Mobile 8700g
- UK – Vodafone 8700v

Deployment Enhancements

Deployment enhancements have been made to the BlackBerry platform to help ease the download and installation process of Apex Mobile. Details include:

- Auto-configuration of transport parameters
- Checking on device for storage allocation
- Detection of OS via installer
- Performing an auto start after a required reboot of the device
- Clearer messaging when a mobile profile is broken
- Better handling when a device radio is turned off

Battery Life Enhancements

Many enhancements have been made to the battery life on the RIM BlackBerry devices. Through multiple energy saving measures and timers, drainage rates have dropped dramatically and battery efficiency has escalated, greatly improving the Apex Mobile user experience on the RIM platform.

General Enhancements for the Palm Treo Platform

New Device Certifications

- United States – Verizon 700p
- United States – Sprint PCS 700p

Combo Picklist Default Values

The Palm Treo Apex Mobile application now supports combo picklists and their default values. Any combo picklist field types created in Salesforce are now supported in a create, read, update, or delete request via Apex Mobile.

Apex Mobile Administration Console

The mobile administration console has many new features and points of integration in this release. New features such as Mobile Trials extend the ability to showcase the Apex Mobile application to prospects without support or sales interaction. New integration initiatives such as single sign-on will greatly improve the mobile administrator's experience and lessen the burden of administrating users in two places.

Mobile Trials

Salesforce users can now sign up for a trial of Apex Mobile. Upon completing the registration process, users will receive an email with instructions for installing the Apex Mobile client on their device. During the activation process, a default profile is used to retrieve key information from the user's organization including tasks, events, accounts, contacts, opportunities, leads and other objects. The default profile can be customized to retrieve any custom object to which the user has access.

Integrated Mobile Administration Console

Mobile Administrators can now manage all aspects of their mobile deployments from within their Salesforce organization. Specifically, Mobile Administrators can install a private AppExchange package to manage mobile users, mobile profiles, and devices. Administrators may access the console via single sign-on without having to authenticate.

Device Info Auto Discovery

Users can now be configured on the console without being associated to a device. The end-user process has not changed at all; the user receives a welcome installation email from which they will download and install the Apex Mobile software. Once the user enters his or her Salesforce credentials to activate the account, the installer detects the device PIN, manufacturer, model, OS, and transport, and auto-creates the device record in the console.

AJAX Toolkit

The Winter '07 release introduces the Apex AJAX Toolkit 8.0. The AJAX Toolkit allows developers to easily create dynamic Web pages and s-controls that harness the full power of the Apex API 8.0 (Apex API 8.0 on page 193).

- **Full-Featured API Support**: The AJAX Toolkit includes complete support for the Apex API version 8.0. The AJAX Toolkit also binds Salesforce components to JavaScript objects and provides complete schema support, including custom objects and custom fields.

- **User Interface Integration**: Leverage the AJAX Toolkit in your s-control or dynamic Web page. With integrated session management, the toolkit automatically establishes a session—there's no need for merge fields or separate login calls.
- **High Performance**: The AJAX Toolkit is tuned for high performance and scalability from the ground up.

Apex API 8.0

The Apex API is the key to how salesforce.com enables The Business Web. Just like consumer Web services like Google, Amazon.com, and eBay, salesforce.com opens its services to the public to allow you to customize and integrate Salesforce for your business and to enable an ecosystem of developers and software providers to build applications to meet the needs of the salesforce.com community.

Winter '07 introduces Apex API 8.0, salesforce.com's most ambitious API release to date. Apex API 8.0 incorporates your most frequently requested enhancements to create an API that is more powerful and efficient than ever before.

SOQL Relationships
With Winter '07, you can retrieve a record and all its related records in a single query. For example, you can retrieve all the data on a detail page including related list records with a single API call. You can also filter queries based on the data in the parent record.

SOQL/SOSL Enhancements
Powerful new methods include:

- ORDER BY and LIMIT to control order and size of returned results.
- `count()` to return result size without retrieving any data.
- `toLabel()` to retrieve translated values from the translation workbench.
- `convertCurrrency()` to filter/retrieve currency values using conversion rates.

Merge API
A single `merge()` call merges accounts, contacts, and leads. You can query and retrieve deleted and archived objects with `queryAll()` and rescue items from recycle bin using `undelete()`.

Upsert with Relationships
In the previous version of the API, `upsert()` could create or update a record using an ID from an external master, streamlining data replication into Salesforce. In API 8.0, `upsert()` establishes relationships to other records using external system IDs, allowing you to replicate data without knowing any Salesforce IDs.

Metadata Enhancement
Enhanced `describeLayout()` allows the efficient retrieval of page layouts for large organizations.

New Platform Features and Objects Exposed
The new `process()` and `processSubmit()` methods enable programmatic processing of workflow approvals. EmailTemplates, CampaignMemberStatus, and other new Winter '07 objects are exposed in the API. The SOAP header EmailHeader allows system email to be triggered via API calls. Also, you can enable customer self service login via the API using the SOAP header LoginScopeHeader.

Outbound Messages
Polling the API is a thing of the past. You can reliably integrate in real time to any endpoint exposed on the Internet by sending outbound messages based on workflow triggers:

- The outbound messaging functionality is based on familiar and easy-to-understand Salesforce concepts like workflow.
- You can monitor the outbound message queue and the outbound message status.
- All outbound messages contain the necessary information to easily call back into the API for a complete integration round-trip.
- Salesforce tries to resend outbound messages for up to 24 hours if an endpoint is temporarily unavailable.

Data Loader Enhancements

Winter '07 includes a new version of the AppExchange Data Loader. The AppExchange Data Loader is a client application that allows you to load data in bulk into or out of any Salesforce object. In Winter '07, version 8.0 offers a new operation, *upsert*, as well as an entirely new command-line batch mode interface. All other existing functionality remains unchanged.

Implementation Tips

- Before installing or upgrading the client, confirm that your environment meets the system requirements:
  - Windows 2000, Windows XP, Linux, or another operating system that supports Java™.

    Windows users can run the AppExchange Data Loader wizards, while non-Windows users can run the application from the command line.
  - 90 MB free disk space.
  - 256 MB available memory.
  - Java JRE 1.5 or later.
- If you are using the command-line batch mode interface in version 7.0 or earlier, see Upgrading Your Batch Mode Interface on page 197 before installing the new version.

About AppExchange Data Loader 8.0

What is the AppExchange Data Loader?

The AppExchange Data Loader is a client application for the bulk import or export of data. Use it to insert, update, delete, or extract Salesforce records.

The AppExchange Data Loader can move data into or out of any type of record. When importing data, it reads, extracts, and loads data from comma separated values (CSV) files. When exporting data, it outputs CSV files.

The AppExchange Data Loader offers the following key features:

- An easy-to-use wizard interface
- An alternate command line interface
- A batch mode interface with database connectivity
- Support for large files with up to millions of rows
- Drag-and-drop field mapping
- Support for all objects, including custom objects
- Detailed success and error log files in CSV format
- A built-in CSV file viewer
- Platform independence, by virtue of being written in Java®

To get started, see the following topics:

- "Installing the AppExchange Data Loader" in the Salesforce online help
- "When to Use the AppExchange Data Loader" in the Salesforce online help

For usage instructions, see the following topics:

- "Configuring the AppExchange Data Loader" in the Salesforce online help
- "Inserting, Updating, or Deleting Data" in the Salesforce online help

- "Exporting Data" in the Salesforce online help
- "Using the Command Line Interface" in the Salesforce online help
- "Running in Batch Mode" in the Salesforce online help

Inserting, Updating, or Deleting Data

User Permissions Needed	
To insert records:	"Create" on the record
To update records:	"Edit" on the record
To upsert records:	"Create" or "edit" on the record
To delete records:	"Delete" on the record

The insert, update, upsert, and delete wizards allow you to add new records, modify existing records, or delete existing records. Note that "upsert" is a combination of inserting and updating - if a record in your file matches an existing record, the existing record will be updated with the values in your file. If no match is found, then the record is created as new.

1. Start the AppExchange Data Loader by choosing **Start ➤ Programs ➤ salesforce.com ➤ AppExchange Data Loader 8.0 ➤ AppExchange Data Loader**.
2. Click **Insert**, **Update**, **Upsert**, or **Delete**. These commands can also be found in the File menu.
3. Enter your Salesforce username and password. Click **Log in** to log in. After your login completes successfully, click **Next**. (Until you log out or close the program, you will not be asked to log in again.)
4. Choose an object. If your object name does not display in the default list, check `Show all objects` to see a complete list of the objects that you can access. The objects will be listed by localized label name, with developer name noted in parentheses. For object descriptions, see the Apex Web Services Developer's Guide.
5. Click **Browse...** to select your CSV file.
6. Click **Next**. After the object and CSV file are initialized, click **OK**.
7. If you are performing an upsert:
   a. Your CSV file must contain a column of ID values for matching against existing records. The column may be either an external ID (a custom field with the "External ID" attribute), or `Id` (the Salesforce record ID). From the drop-down list, select which field to use for matching. If the object has no external ID fields, `Id` will automatically be used. For more information on external IDs, see "Custom Field Attributes" in the Salesforce online help. Click **Next** to continue.
   b. If your file includes the external IDs of an object that has a relationship to your chosen object, enable that external ID for record matching by selecting its name from the drop-down list. If you make no selection here, you can use the related object's `Id` field for matching by mapping it in the next step. Click **Next** to continue.
8. Define how the columns in your CSV file map to Salesforce fields. Click **Choose an Existing Map** to select an existing field mapping, or click **Create or Edit a Map** to create a new map or modify an existing map. See "Defining Field Mappings" in the Salesforce online help for details.
9. Click **Next**.
10. For every operation, the AppExchange Data Loader generates two unique CSV log files; one filename starts with "success," while the other starts with "error." Click **Browse...** to specify a directory for these files.
11. Click **Finish** to perform the operation, and then click **Yes** to confirm.
12. As the operation proceeds, a progress information window reports the status of the data movement.
13. After the operation completes, a confirmation window will summarize your results. Click **View Successes** to view your success file, click **View Errors** to open your errors file, or click **OK** to close. See "Reviewing Output Files" in the Salesforce online help for more information.

Tip: If you are updating or deleting large amounts of data, review "Performing Mass Updates" in the Salesforce online help and "Performing Mass Deletes" in the Salesforce online help for tips and best practices.

Importing Attachments with the AppExchange Data Loader

You can use the AppExchange Data Loader to import attachments to Salesforce.

1. If you are migrating attachments from a source Salesforce organization to a target Salesforce organization, begin by requesting a weekly data export for the source organization. On the Schedule Export page, make sure to select the `Include Attachments...` checkbox, which causes the file `Attachment.csv` to be included in your export. You can use that file in the next step. For more information on the weekly export service, see "Exporting Backup Data" in the Salesforce online help.
2. Confirm that the CSV file you intend to use for attachment importing contains the following columns (each column represents a Salesforce field):
   - `ParentId` - the Salesforce ID of the parent record.
   - `Name` - the name of the attachment file, such as `myattachment.jpg`.
   - `IsPrivate` - "0" if the attachment is not private; "1" if it is private.
   - `OwnerId` - the Salesforce ID of the record owner.
   - `Body` - the Salesforce ID of the attachment.
3. Edit the values in the `Body` column so they contain the full filename of the attachments as they exist on your computer. For example, if an attachment with the ID "123456789" is located on your computer at C:\Export, then set the value as `C:\Export\123456789`. For reference, see this sample CSV file.
4. Proceed with an insert or upsert operation; see "Inserting, Updating, or Deleting Data" in the Salesforce online help. At the `Select data objects` step, make sure to select the `Show all Salesforce objects` checkbox, and the `Attachment` object name in the list.

Note: If your CSV file includes a column of pure attachment ID values, you can use a Microsoft Excel formula field to prepend the directory path in front of the ID value.

Running in Batch Mode

On the Windows 2000 and Windows XP platforms, you can run the AppExchange Data Loader in batch mode from the command line. See the following topics:

- "Understanding Installed Directories and Files" in the Salesforce online help
- "Spring Framework Overview" in the Salesforce online help
- "Running Individual Batch Processes" in the Salesforce online help
- "Configuring Batch Processes" in the Salesforce online help
- "Configuring Database Access" in the Salesforce online help
- "SQL Configuration" in the Salesforce online help
- "Mapping Columns" in the Salesforce online help
- "Command Line Operations" in the Salesforce online help
- "Data Access Objects" in the Salesforce online help
- "Encrypting From the Command Line" in the Salesforce online help

Note: If you have used the batch mode from the command line with a version earlier than 8.0, see "Upgrading Your Batch Mode Interface" in the Salesforce online help.

Upgrading Your Batch Mode Interface

The batch mode interface in versions 8.0 and later of the AppExchange Data Loader are not backwards-compatible with earlier versions. If you are using a version earlier than 8.0 to run batch processes, your options are as follows:

Maintain the old version for batch use
Do not uninstall your old version of the AppExchange Data Loader. Continue to use that version for batch processes. You will not be able to take advantage of newer features such as database connectivity, but your integrations will continue to work. Optionally, install the new version alongside the old version and dedicate the old version solely to batch processes.

Generate a new config.properties file from the new GUI
If you originally generated your `config.properties` file from the graphical user interface, use the new version to set the same properties and generate a new file. Use this new file with the new batch mode interface. For more information, see "Running in Batch Mode" in the Salesforce online help.

Manually update your config.properties file
If your old `config.properties` file was created manually, then you need to manually update it for the new version. For more information, see "Understanding Installed Directories and Files" in the Salesforce online help.

Understanding Installed Directories and Files

In versions 8.0 and later, installing the AppExchange Data Loader creates several directories under the installation directory. The following directories are involved in running the program from the command line:

bin directory
Contains the batch files `encrypt.bat` for encrypting passwords and `process.bat` for running batch processes.
These batch files can only be executed on a Windows platform. However, the commands they contain will be similar for other platforms. For information on running the AppExchange Data Loader from the command line on any platform, see "Using the Command Line Interface" in the Salesforce online help.

conf directory
The default configuration directory. Contains the configuration files `config.properties`, `Loader.class`, and `log-conf.xml`.
The `config.properties` file that is generated when you modify the Settings dialog in the graphical user interface is located at `C:\Documents and Settings\<your Windows username>\Application Data\salesforce.com\AppExchange Data Loader` 8.0. You can copy this file to the conf installation directory to use it for batch processes.

samples directory
Contains three subdirectories of sample files for reference.

File Path Convention

The file paths provided in these topics start one level below the installation directory. For example, `\bin` means `C:\Program Files \salesforce.com\AppExchange Data Loader 8.0\bin`, provided you accepted the default installation directory. If you installed the program to a different location, please substitute that directory path as appropriate.

Spring Framework Overview

The AppExchange Data Loader configuration files are based on the Spring Framework, which is an open source full-stack Java/J2EE application framework.

The Spring Framework allows you to use XML files to configure beans. Each bean represents an instance of an object; the parameters correspond to each object's setter methods. A typical bean has the following attributes:

`id`
Uniquely identifies the bean to `XmlBeanFactory`, which is the class that gets objects from an XML configuration file.

`class`
Specifies the implementation class for the bean instance.

For more information on the Spring Framework, see the official documentation and the support forums.

Running Individual Batch Processes

To start an individual batch process use`\bin\process.bat`, which requires the following parameters:

A configuration directory
The default is `\conf`.

To use an alternate directory, create a new directory and add the following files to it:

- If your process is not interactive, copy `process-conf.xml` from `\samples\conf`.
- If your process requires database connectivity, copy `database-conf.xml` from `\samples\conf`.
- Copy `config.properties` from `\conf`.

A process name
The name of the ProcessRunner bean from `\samples\conf\process-conf.xml`.

Process Example

```
process ./conf accountMasterProcess
```

Note: You can configure external process launchers such as the Microsoft Windows XP Scheduled Task Wizard or a UNIX cron job to run processes on a schedule.

Configuring Batch Processes

Use `\samples\conf\process-conf.xml` to configure your AppExchange Data Loader processes, which are represented by ProcessRunner beans. A process should have `ProcessRunner` as the `class` attribute and the following properties set in the configuration file:

`name`
Sets the ProcessRunner name, which is also used as the nongeneric thread name and for configuration backing files (see below).

`configOverrideMap`
A property of type `map` where each entry represents a configuration setting: the key is the setting name; the value is the setting value.

The configuration backing file stores configuration parameter values from the last run and is used to load default configuration parameters. The settings in `configOverrideMap` take precedence over those in the configuration backing file. The configuration backing file is managed programmatically and does not require any manual edits.

For the names and descriptions of available process configuration parameters, see Data Loader Process Configuration Parameters.

Configuring Database Access

When running the AppExchange Data Loader in batch mode from the command line, use `\samples\conf\database-conf.xml` to configure database access objects.

DatabaseConfig Bean

The top-level database configuration object is the `DatabaseConfig` bean, which has the following properties:

`sqlConfig`
The SQL configuration bean for the data access object that interacts with a database.

`dataSource`
The bean that acts as database driver and authenticator. It must refer to an implementation of `javax.sql.DataSource` such as `org.apache.commons.dbcp.BasicDataSource`.

DatabaseConfig Example

```
<bean id="AccountInsert"
    class="com.salesforce.lexiloader.dao.database.DatabaseConfig"
    singleton="true">
    <property name="sqlConfig" ref="accountInsertSql"/>
</bean>
```

DataSource

The `DataSource` bean sets the physical information needed for database connections. It typically has the following properties, at minimum:

`driverClassName`
The fully qualified name of the implementation of a JDBC driver.

`url`
The string for physically connecting to the database.

`username`
The username for logging in to the database.

`password`
The password for logging in to the database.

Depending on your implementation, additional information may be required. For example, use `org.apache.commons.dbcp.BasicDataSource` when database connections are pooled.

DataSource Example

```
<bean id="oracleRepDataSource"
    class="org.apache.commons.dbcp.BasicDataSource"
    destroy-method="close">
    <property name="driverClassName" value="oracle.jdbc.driver.OracleDriver"/>
    <property name="url"
value="jdbc:oracle:thin:@myserver.internal.salesforce.com:1521:TEST"/>
    <property name="username" value="test"/>
    <property name="password" value="test"/>
</bean>
```

SQL Configuration

When running the AppExchange Data Loader in batch mode from the command line, `sqlConfig` contains configuration parameters for accessing specific data in the database. As shown in the code samples below, queries and inserts are different but very similar. The bean must be of type `com.salesforce.lexiloader.dao.database.SqlConfig` and have the following properties:

`sqlString`
The SQL code to be used by the data access object.

The SQL can contain replacement parameters that make the string dependent on configuration or operation variables. Replacement parameters must be delimited on both sides by "@" characters. For example, `@process.lastRunDate@`.

`sqlParams`
A property of type `map` that contains descriptions of the replacement parameters specified in `sqlString`. Each entry represents one replacement parameter: the key is the replacement parameter's name, the value is the fully qualified Java type to be used when the parameter is set on the SQL statement. Note that "java.sql" types are sometimes required, such as `java.sql.Date` instead of `java.util.Date`. For more information, see the official JDBC API documentation.

`columnNames`
Used when queries (`SELECT` statements) return a JDBC `ResultSet`. Contains column names for the data outputted by executing the SQL. The column names are used to access and return the output to the caller of the `DataReader` interface.

SQL Query Bean Example

```
<bean id="accountMasterSql"
    class="com.salesforce.lexiloader.dao.database.SqlConfig"
    singleton="true">
    <property name="sqlString"/>
        <value>
            SELECT distinct
                '012x00000000Ij7' recordTypeId,
                accounts.account_number,
                org.organization_name,
                concat (concat(parties.address1, ' '), parties.address2) billing_address,
                locs.city,
                locs.postal_code,
                locs.state,
                locs.country,
                parties.sic_code
            from
                ar.hz_cust_accounts accounts,
                ar.hz_organization_profiles org,
                ar.hz_parties parties,
                ar.hz_party_sites party_sites,
                ar.hz_locations locs
            where
                accounts.PARTY_ID = org.PARTY_ID
                and parties.PARTY_ID = accounts.PARTY_ID
                and party_sites.PARTY_ID = accounts.PARTY_ID
                and locs.LOCATION_ID = party_sites.LOCATION_ID
                and (locs.last_update_date > @process.lastRunDate@ OR
accounts.last_update_date > @process.lastRunDate@
        </value>
    </property>
    <property name="columNames">
        <list>
            <value>recordTypeId</value>
            <value>account_number</value>
```

```
            <value>organization_name</value>
            <value>billing_address</value>
            <value>city</value>
            <value>postal_code</value>
            <value>state</value>
            <value>country</value>
            <value>sic_code</value>
        </list>
....</property>
    <property name="sqlParams">
        <map>
            <entry key="process.lastRunDate" value="java.sql.Date"/>
        </map>
    </property>
</bean>
```

SQL Insert Bean Example

```
<bean id="partiesInsertSql"
    class="com.salesforce.lexiloader.dao.database.SqlConfig"
    singleton="true">
    <property name="sqlString"/>
        <value>
            INSERT INTO REP.INT_PARTIES (
            BILLING_ADDRESS, SIC_CODE)
            VALUES (@billing_address@, @sic_code@)
        </value>
    </property>
    <property name="sqlParams"/>
        <map>
            <entry key="billing_address" value="java.lang.String"/>
            <entry key="sic_code" value="java.lang.String"/>
        </map>
    </property>
</bean>
```

Mapping Columns

When running the AppExchange Data Loader in batch mode from the command line, you must create a properties file that maps values between Salesforce and data access objects.

1. Create a new file.
2. Observe the following syntax:
   - On each line, pair a data source with its destination.
   - Put the data source on the left, an equals sign (=) as a separator, and the destination on the right.
   - Data sources can be either column names or constants. Surround constants with double quotation marks, as in "sampleconstant". Values without quotation marks are treated as column names.
   - Destinations must be column names.
   - You may map constants by surrounding them with double quotation marks, as in `"United States"=BillingCountry`.
3. In your configuration file, use the parameter `process.mappingFile` to specify the name of your mapping file.

Column Mapping Example for Data Insert

The Salesforce fields are on the right.

```
SLA__C=SLA__c
BILLINGCITY=BillingCity
SYSTEMMODSTAMP=
OWNERID=OwnerId
```

```
CUSTOMERPRIORITY__C=CustomerPriority__c
ANNUALREVENUE=AnnualRevenue
DESCRIPTION=Description
BILLINGSTREET=BillingStreet
SHIPPINGSTATE=ShippingState
```

Column Mapping Example for Data Export

The Salesforce fields are on the left.

```
Id=account_number
Name=name
Phone=phone
```

Command Line Operations

When running the AppExchange Data Loader in batch mode from the command line, several operations are supported. An operation represents the flow of data between Salesforce and an external *data source* such as a CSV file or a database. See the following list of operation names and descriptions.

`Extract`
Uses a Salesforce Object Query Language (SOQL) string to export a set of records from Salesforce, then writes the exported data to a data source. For more information about SOQL, visit the Apex Developer Network.

`Insert`
Loads data from a data source into Salesforce as new records.

`Update`
Loads data from a data source into Salesforce, where existing records with matching ID fields will be updated.

`Upsert`
Loads data from a data source into Salesforce, where existing records with a matching custom external ID field will be updated; records without matches will be inserted as new records.

`Delete`
Loads data from a data source into Salesforce, where existing records with matching ID fields will be deleted.

Data Access Objects

When running the AppExchange Data Loader in batch mode from the command line, several data access objects are supported. A data access object allows access to an external data source outside of Salesforce. They can implement a read interface (`DataReader`), a write interface (`DataWriter`), or both. See the following list of object names and descriptions.

csvRead
Allows the reading of a comma or tab-delimited file. There should be a header at the top of the file that describes each column.

csvWrite
Allows writing to a comma or tab-delimited file. A header will be outputted at the top of the file based on the column list provided by the caller.

databaseRead
Allows the reading of a database. Use `database-conf.xml` to configure database access. For more information, see "Configuring Database Access" in the Salesforce online help.

databaseWrite
Allows writing to a database. Use `database-conf.xml` to configure database access. For more information, see "Configuring Database Access" in the Salesforce online help.

Encrypting From the Command Line

When running the AppExchange Data Loader in batch mode from the command line, you must encrypt the following configuration parameters:

- `sfdc.password`
- `sfdc.proxyPassword`

Use the utility described below to perform encryption.

Using the Encryption Utility

The AppExchange Data Loader offers an encryption utility to secure passwords specified in configuration files. To use the encryption utility:

1. Run `\bin\encrypt.bat`.
2. At the command line, follow the prompts provided to execute the following actions:

Generate a key
Key text is generated onscreen from the text you provide. Carefully copy the key text to a key file, omitting any leading or trailing spaces. The key file can then be used for encryption and decryption.

Encrypt text
Generates an encrypted version of a password or other text. Optionally, you can provide a key file for the encryption. In the configuration file, make sure that the encrypted text is copied precisely and the key file is mentioned.

Verify encrypted text
Given encrypted and decrypted versions of a password, verifies whether the encrypted password provided matches its decrypted version. A success or failure message will be printed to the command line.

Additional Apex Enhancements

AppExchange Apps Enhancements

- The publisher of an AppExchange app may have included a link to an external website with information about configuring your app. If so, the AppExchange Downloads page displays a **Configure** option next to the app when you click **Setup ➤ Exchange ➤ Installed Apps**. Click **Configure** to view the publisher's suggested configurations for the app.
- You can now package the following components:
  - Custom fields on standard objects
  - Record types on custom objects
  - Validation rules on custom objects

Custom Object Enhancements

Custom Tab Icons

If the document used for the icon in a custom tab is later deleted from the Documents tab, Salesforce replaces it with a default multicolor block icon ( ).

Recursive "Self" Relationships

You can now create a custom object relationship between an object and itself, but it must be a lookup relationship and a single record cannot be linked to itself.

Simplified Custom Object Creation

The multi-step wizard for creating or modifying custom objects has been simplified to a single Custom Object Definition page:

1. Click **Setup ➤ Build ➤ Custom Objects**.
2. Click **New Custom Object**, or click **Edit** to modify an existing custom object.

Tracking Field History for Custom Objects

You can now select fields to track on the History related list of custom objects. Any time a user modifies any of the fields whose history is set to be tracked, a new entry is added to the History related list. All entries include the date, time, nature of the change, and who made the change. History data does not count against your organization's storage limit.

To track field history for custom objects:

1. Click **Setup ➤ Build ➤ Custom Objects** and click **Edit** next to the name of the custom object whose history you want to track.
2. Select the `Track Field History` checkbox.
3. Click **Save**.
4. Select the name of the custom object.
5. Click **Set History Tracking** in the Custom Fields & Relationships section.

   When you choose the fields you want to track, Salesforce begins tracking history from that date and time forward. Changes made before that date and time are not included in the history.
6. Choose the fields you want tracked in the History related list of the record detail page.
7. Click **Save**.

   When you start history tracking for custom objects, be sure to customize custom object page layouts to include the History related list. For more information, see "Customizing Page Layouts" in the Salesforce online help.

Email Templates

- Custom and HTML email templates have a text-only version for recipients who are unable to read HTML emails. The text-only version is now automatically updated whenever you modify the HTML portion of the template, provided you have left the text-only version blank.
- In email templates, you can add substitute text to any merge field. Substitute text displays in a sent email if the merge record does not contain data for that field. To add substitute text, place a comma after the field name and enter the text before the closing bracket, for example: `Dear {!Contact.FirstName, Sir or Madam}`. When you save the template, the merge field will appear in the email template with the following syntax: `Dear {!NullValue(Contact.FirstName, "Sir or Madam")}`. The syntax change in the saved template is new with Winter '07, and all existing templates will automatically reflect this change.

Field Enhancements

Hierarchical Relationship Fields on Users

A new type of custom field is available on users to manage hierarchical relationships between users. Choose the `Hierarchical Relationship` type when creating a custom user field if you want it to be a lookup for another user that prevents cyclical references. This is useful when creating a field to store a user's manager because managers cannot directly or indirectly report to themselves.

Increased Limits for Controlling Picklists

The maximum number of values allowed in a controlling picklist field has been increased to 300.

Uniqueness and Case-Sensitivity Constraints on Fields

A new custom field attribute ensures the value of the field is never duplicated. Additionally, when the custom field type is Text, the unique attribute designates if Salesforce detects duplicates based on case. Select `Treat "ABC" and "abc" as different values` if you want to use case-sensitive behavior, or select `Treat "ABC" and "abc" as duplicate values` if you want to use case-insensitive behavior.

Universally Required Fields

Up until now, you have been able to make a field required on a page layout or through field-level security. Now, you can make a field required universally, giving you a higher level of data quality. A universally required field is a custom field that must have a value whenever a record is saved within Salesforce, the Apex API, or automated processes such as Web-to-Lead and Web-to-Case. You can make the following types of custom fields universally required:

- Date
- Date/Time
- Email
- Master-Detail Relationship
- Number
- Percent
- Phone
- Text
- Text Area
- URL

To make a custom field universally required, select the **Required** checkbox when defining the custom field.

Merge Fields

The following standard fields are now available for use as merge fields in formulas and s-controls:

Object	Field Label	Merge Field Name
Event	Name	WhoId
Event	Related To	WhatId
Organization	User Interface Theme	UiSkin
Profile	Created By ID	CreatedById
Profile	Created Date	CreatedDate
Profile	Description	Description
Profile	Is Single Sign On Enabled	IsSsoEnabled
Profile	License Type	LicenseType

Object	Field Label	Merge Field Name
Profile	Name	Name
Profile	Profile ID	Id
Profile	Profile Type	Type
Record Type	Record Type Name	Name
Task	Name	WhoId
Task	Related To	WhatId
User	All standard user fields.	
User Role	Case Access Level For Account Owner	CaseAccessForAccountOwner
User Role	Description	RollupDescription
User Role	Name	Name
User Role	Opportunity Access Level For Account Owner	OpportunityAccessForAccountOwner
User Role	Role ID	Id

Formula Enhancements

Many new formula functions are available for you to use wherever formulas are available. Some functions are designed to apply to a specific feature, such as s-controls.

Note: You no longer need to surround merge fields in formulas with the {! and } characters. However, your existing formulas do not need updating. The formula builder automatically removes these characters when they are not needed.

Use the following new functions wherever formulas are available:

BR

Description:	Inserts a line break in a string of text
Use:	`BR()`
Example:	`FirstName & " " & " " & LastName & BR() & MailingStreet & BR() & MailingCity & " " & MailingState & " " & MailingPostalCode` This displays a formatted mailing address for a contact including spaces and line breaks where appropriate.
Tips:	• Do not remove the parentheses after the function name. • Keep the parentheses empty. They do not need to contain a value. • Remember to surround the BR() with concatenation operators: &.

DATEVALUE

Description:	Returns a date value for a date/time or text expression.
Use:	`DATEVALUE(`*`expression`*`)` and replace *`expression`* with a date/time or text value, merge field, or expression.
Example:	`DATEVALUE(ClosedDate)` creates a date field based on the value of the `Date/Time Closed` field. `DATEVALUE("2005-11-15")` returns November 15, 2005 as a date value.
Tips:	• If the field referenced in the function is not a valid text or date/time field, the formula field displays #ERROR! • When entering a date as a literal value, surround the date with quotes and use the following format: YYYY-MM-DD, that is, a four-digit year, two-digit month, and two-digit day. • If the *`expression`* does not match valid date ranges, such as the MM is not between 01 and 12, the formula field displays #ERROR!

FIND

Description:	Returns the position of a string within a string of text represented as a number.
Use:	`FIND(`*`search_text, text`*`[, `*`start_num`*`])` and replace *`search_text`* with the string you want to find, replace *`text`* with the field or expression you want to search, and replace *`start_num`* with the number of the character from which to start searching from left to right.
Example:	`FIND(" ", Street)` returns the character position of the first space in the `Street` field. You can use this number to find out the length of the street address as a means of separating a street address from street name in an address field. `SUBSTITUTE(Email, LEFT(Email, FIND("@", Email)), "www.")` finds the location of the @ sign in a person's email address to determine the length of text to replace with a "www." as a means of deriving their website address.
Tips:	• Be sure to remove the brackets, [and], from your formula before validating it. • If the field referenced in your *`text`* parameter is blank, the formula field displays 0. • Your *`search_text`* parameter is case sensitive. • Your *`text`* parameter cannot contain any wildcard characters. • If your search does not return any results, a 0 displays in the field.

	• The *start_num* parameter is optional. If you do not enter a *start_num* value, the formula uses the value one, or the first character in the string. • If your *start_num* is not greater than zero, a 0 displays in the field. • If your *start_num* is greater than the length of the text, a 0 displays in the field. • When entering your *start_num* parameter, remember that some fields like the`Website` field are unique because a "http://" is automatically appended to the beginning of the text you enter. • Note that the first character in a string is designated as one rather than zero.

MAX

Description:	Returns the highest number from a list of numbers.
Use:	`MAX(`*number, number,...*`)` and replace *number* with the fields or expressions from which you want to retrieve the highest number.

Example:	**Book Royalties**
	`MAX(0.10 * Pages__c , (Retail_Price__c * 0.07)* Total_Sold__c )`
	This example determines which amount to pay in royalties for a book. It displays the greater of two amounts: $0.07 for each book sold or $0.10 per page. It assumes you have custom number fields for `Pages` and `Total Sold` and a custom currency field for `Retail Price`.
	Commissions
	`MAX( $User.Commission_Percent__c * Price , Price * Account_Discount__c , 100)`
	This example determines what commission to log for an asset based on which is greater: the user's commission percentage of the price, the price times the discount percent stored for the account or 100 dollars. This example assumes you have two custom percent fields on users and assets.

MIN

Description:	Returns the lowest number from a list of numbers.
Use:	`MIN(`*number, number,...*`)` and replace *number* with the fields or expressions from which you want to retrieve the lowest number.

Example:	**401K Matching**
	`MIN(250, Contribution__c /2)`
	This example determines which amount to provide in employee 401K matching based on a matching program of half of the employee's contribution or $250, whichever is less. It assumes you have custom currency field for `Contribution`.
	Bonus
	`MIN( Gross__c * Bonus_Percent__c , Performance__c / Number_of_Employees__c )`
	This example determines an employee's bonus amount based on the smallest of two amounts: the employee's gross times bonus percent or an equally divided amount of the company's performance amount among all employees. It assumes you have custom number field for `Number of Employees`, a custom percent field for `Bonus Percent`, and currency custom fields for the employee's `Gross` and company's `Performance`.

SUBSTITUTE

Description:	Substitutes new text for old text in a text string.
Use:	`SUBSTITUTE(text, old_text, new_text)` and replace *`text`* with the field or value for which you want to substitute values, *`old_text`* with the text you want replaced, and *`new_text`* with the text you want to replace the *`old_text`*.
Example:	`SUBSTITUTE(Name, "Coupon", "Discount")` returns the name of an opportunity that contains the term "Coupon" with the opportunity name plus "Discount" wherever the term "Coupon" existed. `SUBSTITUTE(Email, LEFT(Email, FIND("@", Email)), "www.")` finds the location of the @ sign in a person's email address to determine the length of text to replace with a "www." as a means of deriving their website address.
Tips:	• Each term provided in quotes is case sensitive. • If the *`old_text`* appears more than once, each occurrence is replaced with the *`new_text`* value provided even when that results in duplicates.

Use the following new advanced functions for custom buttons, links, and s-controls:

GETRECORDIDS

Description:	Returns an array of strings in the form of record IDs for the selected records in a list, such as a list view or related list.
Use:	`{!GETRECORDIDS(object_type)}` and replace *`object_type`* with a reference to the custom or standard object for the records you want to retrieve.

Custom Button Example:	```{!REQUIRESCRIPT("/soap/ajax/8.0/connection.js")}
	
	var records =
	{!GETRECORDIDS($ObjectType.Case)};
	var newRecords = [];
	
	if (records[0] == null)
	{
	alert("Please select at least one row")
	}
	else
	{
	for (var n in records) {
	var c = new sforce.SObject("Case");
	c.id = records[n];
	c.Status = "New";
	newRecords.push(c);
	}
	
	result =
	sforce.connection.update(newRecords);
	
	window.location.reload();
	}```

In this example, all selected case records are updated with a `Status` of "New." To set this up in your organization, create a custom list button for cases with the following attributes:

- `Display Type` is "List Button"
- `Behavior` is "Execute JavaScript"
- `Content` Source is "OnClick Java Script"

Paste the sample code above into the content of your custom button. Finally, add the list button to the a page layout that contains the Cases related list, such as accounts or opportunities. Users can select any number of cases in the related list and click the list button to change the status of those cases at once. Notice the check for `records[0] == null`, which displays a message to users when they do not select at least one record in the list.

Tips:	• Use global variables to access special merge fields for s-controls, custom buttons, and links. • Activities are special types of objects. Use {!GETRECORDIDS($ObjectType.Task)} when creating a task list button. Use

	{!GETRECORDIDS($ObjectType.Event)} when creating an event list button. • This function is only available in custom buttons, links, and s-controls.

INCLUDE

Description:	Returns content from an s-control snippet. Use this function to reuse common code in many s-controls.
Use:	`{!INCLUDE(source, [inputs])}` and replace *`source`* with the s-control snippet you want to reference. Replace *`inputs`* with any information you need to pass to the snippet.

S-Control Example:	**Including Header Snippet**
	
	`<html>`
	`<body>`
	`{! INCLUDE($SControl.Header_Snippet,`
	`[title = "My Title", theme = "modern"])}`
	`</body>`
	`</html>`
	
	This example references a snippet that provides a header for a page that you created to display in a web tab. It displays the page title "My Title." Use the $SControl global variable to reference a custom s-control.
	
	Including Input Parameters
	
	Use the following two examples to see how you can create a reusable snippet and include it in an s-control.
	
	`<h2 class="{!$Request.titleTheme}.title">`
	`{!$Request.titleText}</h2>`
	
	This snippet requires two input parameters: *`titleTheme`* and *`titleText`*. It is a reusable HTML tag that presents a page title and theme based on input parameters. Next, create an s-control that includes this snippet:
	
	`<html>`
	`<head>`
	`</head>`
	`<body>`
	`{! INCLUDE($SControl.Title_Snippet,`
	`[titleTheme = "modern", titleText = "My`
	`Sample Title"]) }`
	
	`... Insert your page specific content here`
	`...`
	
	`</body>`
	`</html>`

	This s-control uses the snippet titled Title_Snippet to display the title of the page "My Sample Title" and modern theme. Replace `Insert your page specific content here` with your own HTML content and use the s-control as the source of a web tab to create your own pages in Salesforce.
Tips:	• Because this function references an s-control snippet and does not copy it, it always runs the latest content of the s-control snippet. Remember when making a change to your s-control snippet that it affects all INCLUDE functions that refer to it. • Use the $Request global variable to access any information inside the snippet. • This function is only available in custom buttons, links, and s-controls.

LINKTO

Description:	Returns a relative URL in the form of a link (href and anchor tags) for a custom s-control or Salesforce page.
Use:	`{!LINKTO(label, target, id, [inputs], [no override]}` and replace `label` with the text for the link, `target` with the URL, and `id` with a reference to the record. Inputs are optional and can include any additional parameters you want to add to the link. The `no override` argument is also optional and defaults to "false." It applies to targets for standard Salesforce pages such as $Action.Account.New. Replace `no override` with "true" when you want to display a standard Salesforce page regardless of whether you have defined an override for it elsewhere.

S-Control Example:	**New Account S-Control**
	
	`<html>`
	`<body>`
	`{!LINKTO("Create a New Account",`
	`$Action.Account.New,`
	`$ObjectType.Account)}`
	`</body>`
	`</html>`
	
	This example allows users to click a link to create a new account. It is useful in account list views or web tabs where you want users to create an account directly from that page. Use the $Action global variable to access the new account page in Salesforce.
	
	New Email Window S-Control
	
	`<html>`
	`<body>`
	`{!LINKTO("Email link",`
	`"mailto:support@yourcompany.com?`

```
subject=Please%20Help")};
</body>
</html>
```

This example launches a new email window addressed to support@yourcompany.com with the subject "Please Help" whenever a user clicks "Mail link."

Link to Another S-Control

```
<html>
<body>
{!LINKTO("Check for duplicates",
  $Scontrol.dedup_account, Account.Id)}
</body>
</html>
```

Use this example to generate a page containing a hyperlink labeled "Check for duplicates." When users click this link, Salesforce runs your custom s-control. This example assumes you have already created a custom s-control to find duplicate accounts and merge their information.

Tips:

- Avoid using this function in an inline s-control if you want it to open in a new window.
- Enclose multiple *inputs* in brackets to indicate they are together:

```
{!LINKTO("View Case",  $Action.Case.View
 ,  Case.Id , [parm1="A", parm2="B"])}
```

- Set *inputs* to null if you do not have any to pass yet you want to set the *no override* argument:

```
{!LINKTO("View Case",  $Action.Case.View
 ,  Case.Id , null, true)}
```

- This function is only available in custom buttons, links, and s-controls.

REQUIRESCRIPT

Description: Returns a script tag with source for a URL you specify. Use this function when referencing the ApexAJAX Toolkit or other JavaScript toolkits.

Use: `{!REQUIRESCRIPT(url)}` and replace *url* with the link for the script that is required.

For the AJAX Toolkit:

```
{!requireScript("/soap/ajax/8.0/connection.js")}
```

	Returns:
	`<script src="/soap/ajax/8.0/connection.js"></script>`
	For Dojo:
	`{!requireScript("/js/dojo/0.3.1/dojo.js")}`
	Returns:
	`<script src="/js/dojo/0.3.1/dojo.js"></script>`

Custom Button Example:	`{!REQUIRESCRIPT("/soap/ajax/8.0/connection.js")}`
	`var c = new sforce.SObject("Case");`
	`c.id = "{!Case.Id}";`
	`c.Status = "New";`
	`result = sforce.connection.update([c]);`
	`window.location.reload();`
	This example sets the `Status` of a case to "New" whenever a user clicks a custom button from the case detail page. To build this custom button, define a custom button that has the `Behavior` set to "Execute JavaScript" and `Display Type` set to "Detail Page Button," paste the content above, and add it to your case page layouts.

Tips:	• Use global variables to access special merge fields for s-controls. • Use this function when creating s-controls for custom buttons or links where you have set the `Behavior` to "Execute JavaScript" because the script tag should be outside the OnClick code. • This function is only available in custom buttons, links, and s-controls.

URLFOR

Description:	Returns a relative URL for an action or s-control.
Use:	`{!URLFOR(`*`target`*`, `*`id`*`, [`*`inputs`*`], [`*`no override`*`])}` and replace *`target`* with the URL, *`id`* with a reference to the record, and *`inputs`* with any optional parameters. The *`no override`* argument is also optional and defaults to "false." It applies to targets for standard Salesforce pages such as $Action.Account.New. Replace *`no override`* with "true" when you want to display a standard Salesforce page regardless of whether you have defined an override for it elsewhere.

S-Control Example:

```
<html>
<head>
<script src="/soap/ajax/8.0/connection.js">
</script>
<script>
function init()
{
var queryResult =
sforce.connection.query("Select count() from
 CaseSolution Where CaseId = '{!Case.Id}'");
var size = queryResult.size;
if (size > 0) {
//go to the standard case close page without
 invoking the override
window.parent.location.href =
"{!URLFOR($Action.Case.CloseCase, Case.Id,
[retURL=URLFOR($Action.Case.View, Case.Id)],
 true)}"
}
else
{
alert("Case must contain at least one
solution before it can be closed.");
//go to the standard case detail page
this.parent.location.href =
"{!URLFOR($Action.Case.View, Case.Id)}";
}
}
</script>
</head>
<body onload="init()">
<p> </p>
</body>
</html>
```

In this example, the s-control displays a message to users when they click **Close Case** on a case with no associated solutions. If the case is associated with at least one solution, the close case page displays as usual. To implement this example, create an s-control with the content above. Then, override the close case option using the s-control.

This example shows how you can validate data using a standard button override. Use validation rules to validate data on a record and an s-control like the one in this example to validate associated data. This example does not apply to records updated using the API.

This example uses the URLFOR function to build Salesforce URLs rather than hard-coding them, which is more scalable. It also sets the *`no override`* argument to "true," telling Salesforce to ignore the override and call a standard close case action within an override.

Tips:

- Use global variables to access special merge fields for s-controls.

- Enclose multiple *inputs* in brackets to indicate they are together:

```
{!URLFOR($Action.Case.View,  Case.Id,
[parm1="A", parm2="B"])}
```

- Set *inputs* to null if you do not have any to pass yet you want to set the *no override* argument:

```
{!URLFOR($Action.Case.View,  Case.Id,
null, true)}
```

- When you override a standard action, that action is no longer available in Salesforce. For example, if you override the new account action, that affects the **New** button on all pages such as the account detail page, account related lists on other detail pages, and the **Create New** drop down list in the sidebar. To override a standard action yet still access it, use the *no override* argument in your s-control to reference that action.
- This function is only available in custom buttons, links, and s-controls.

Import Queue

The Import Queue is now available by clicking **Setup ➤ Monitoring ➤ View the Import Queue**.

Licenses Related List on Company Information Page

You can now view information about your organization's licenses on the Company Information page.

To view a list of available licenses by type, click **Setup ➤ Company Profile ➤ Company Information**. This page lists the following for each type of user license:

- `Total Licenses` indicates the number of licenses for which your organization is billed and that are available to you.
- `Active Licenses` is the number that you have assigned to users.
- `Licenses Remaining` is the number of unused licenses.

New Languages: Finnish and Thai

Salesforce now includes support for Finnish and Thai in the application, increasing the supported languages to fourteen:

- Brazilian Portuguese
- Simplified Chinese
- Traditional Chinese
- English
- Dutch
- Finnish
- French
- German
- Italian
- Japanese

- Korean
- Spanish
- Swedish
- Thai

Users can change their personal language setting by clicking **Setup ➤ My Personal Information ➤ Personal Information ➤ Edit**.

Page Layout Enhancements

- When editing page layouts, you may want to save changes and continue editing. Use the new **Quick Save** option on page layouts to do just that.
- All of the editing properties for an item on the page layout, including fields, related lists, and s-controls, are now consolidated into a single button. Click **Edit Properties** to edit the attributes of any type of item on the page layout.
- To edit the properties of any item on a page layout, double-click the item. For example, double-click a related list to change the fields, sorting of fields, standard buttons, custom buttons, and more.
- The **Printable View** button is now a link to make more room for your custom buttons.
- You can now add the `Account Name` field to the Close Case Layout.

Search Enhancements

Search result rankings have been optimized, using a dynamic score, to produce more relevant results. A dynamic score combines information retrieval algorithms with data-specific heuristics.

Security Enhancements

With Winter '07, you can increase your organization's online security with two new features that block HTML file uploads, which could potentially contain malicious JavaScript or other code:

- Users are now prohibited from uploading solution attachments with the following file extensions: htm, html, htt, htx, mhtm, mhtml, shtm, shtml, acgi. This security enhancement is enabled by default for all organizations and cannot be disabled.
- A new security setting, `Disallow HTML documents and attachments`, blocks users from uploading any file to the Documents tab or attaching it to a record if it has one of the following file extensions: htm, html, htt, htx, mhtm, mhtml, shtm, shtml, acgi.

  This setting is disabled by default. To enable this setting, click **Setup ➤ Security Controls ➤ HTML Documents and Attachments Settings**.

  Note: HTML attachments are not permitted on solutions, regardless of whether this security setting is enabled. In addition, this setting does not affect attachments on email templates; HTML attachments on email templates are always permitted.

  After this setting is enabled, previously-uploaded HTML documents and attachments are unaffected. However, when users attempt to view an HTML attachment or document, their browser first prompts them to open the file in the browser, save it to their computer, or cancel the action.

Setup Audit Trail

Setting up Email-to-Case is now tracked on the setup audit trail. Users who have the "View Setup and Configuration" permission can view your organization's setup audit trail by clicking **Setup ➤ Security Controls ➤ View Setup Audit Trail**.

Supported Browsers

With Winter '07, Salesforce supports the following browsers:

- Microsoft® Internet Explorer version 6.0 or later (recommended)
- Mozilla Firefox version 1.5 or later

Regardless of which browser you use, JavaScript must be enabled.

User Interface Customization Enhancements

Collapsible Sidebar

The collapsible sidebar gives users the ability to show or hide the sidebar on every Salesforce page that normally includes the sidebar. When you select the `Enable Collapsible Sidebar` setting under **Setup ➤ Customize ➤ User Interface**, the collapsible sidebar becomes available to all users in your organization, but each user can choose his or her own preference for displaying the sidebar. Users can leave the sidebar visible at all times, or they can collapse the sidebar and only show it when needed by clicking the edge of the collapsed sidebar.

Tip: If your organization uses divisions, we recommend that you keep the sidebar pinned and visible at all times so you always have access to the Divisions drop-down list.

Related List Hover Links

Related list hover links now display at the top of record detail pages for all users. Users can mouse-over a related list hover link to display the corresponding related list in an interactive overlay that allows users to quickly view and manage the related list items. Users can also click a related list hover link to jump down to the content of the related list without having to scroll down the page.
Related list hover links are enabled for all organizations with Winter '07. Users with the "Customize Application" permission can disable them if necessary.
To enable or disable related list hover links:

1. Click **Setup ➤ Customize ➤ User Interface**.
2. Select the `Enable Related List Hover Links` checkbox.

   You can deselect the checkbox at any time to turn off related list hover links.
3. Click **Save**.

Optional Display of Custom Home Page Components

Now you can opt to show your custom sidebar components on all pages in Salesforce. This is helpful if you have custom home page layouts that include components in the sidebar. Selecting this option makes the sidebar components available on all pages in Salesforce.

New Printable View Link

On all record detail pages, the **Printable View** button has been changed to a link with the same name. The **Printable View** link is now located at the top right of the record detail page near the context-sensitive **Help for this Page** link.

User Object Enhancements

Delegated Approver Field

A new standard field is available on users. Use the `Delegated Approver` field to indicate which user can approve or reject approval requests assigned to that user.

Hierarchical Relationships

A new type of custom field is available on users to manage hierarchical relationships between users. Choose the `Hierarchical Relationship` type when creating a custom user field if you want it to be a lookup for another user that prevents cyclical references. This is useful when creating a field to store a user's manager because managers cannot directly or indirectly report to themselves.

Restricted Custom Fields

When you create a custom field on users, a new `Restricted Field` checkbox displays which you can select to only allow users with the "Manage Users" permission to edit the field. This checkbox is not available on custom formula fields.

User Fields in List Views

You can now add the following user fields to user list views, user lookup fields, user search layouts, and user reports:

- `Allow Forecasting`
- `City`
- `Created By Alias`
- `Created By`
- `Created Date`
- `End of Day`
- `Last Modified By Alias`
- `Last Modified By`
- `Last Modified Date`
- `Password Expiration Date`
- `Start of Day`
- `State/Province`
- `Street`
- `Time Zone`
- `Zip/Postal Code`
- `Mobile`
- `Profile`

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