Data Quality

CONTENTS

Data Quality

Business success depends on accurate, complete data that your sales team knows they can rely on. Use Duplicate Management to reduce and prevent duplicate records. Use Data Integration to incorporate data from third parties into your records. Duplicate Management and Data Integration are included in Salesforce.

> **Note** Sales Cloud is now Agentforce Sales. You may see references to Sales Cloud in our application and documentation.

Manage Duplicate Records
Maintaining clean, accurate data is one of the most important things you can do to get the most out of Salesforce. It builds the trust of your sales team and helps you work toward complying with various data protection and privacy regulations. Salesforce gives you tools for managing duplicates one at a time and across your org, and to track your progress in eliminating duplicates.

Integrate Third-Party Data with Your Records
Give your sales team data and connections that they can use to cultivate great relationships with customers and target productive prospects. Lightning Data connects you with firmographic, industry, and region-specific data from third-party providers. You license Lightning Data packages directly from providers, and you use a convenient unified interface to integrate data from all third-party sources into Salesforce.

Manage Duplicate Records

Maintaining clean, accurate data is one of the most important things you can do to get the most out of Salesforce. It builds the trust of your sales team and helps you work toward complying with various data protection and privacy regulations. Salesforce gives you tools for managing duplicates one at a time and across your org, and to track your progress in eliminating duplicates.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

USER PERMISSIONS NEEDED	
To view duplicate rules and matching rules:	View Setup and Configuration
To create, edit, delete, activate, and deactivate duplicate rules and matching rules:	Customize Application

Manage Duplicates One at a Time
Give your sales team the tools they need for maintaining great relationships with customers, and keep your leads, accounts, and contacts clutter free. By activating duplicate rules and the Potential Duplicates component, you can control whether and when sales reps can create duplicate accounts, contacts, and leads. You can also give them permission to merge duplicate leads, business and person accounts, and contacts.

Manage Duplicates Globally
Find duplicates across your org by running duplicate jobs. Use reports to share job results with others, and use duplicate record sets to merge the duplicates. Use information about completed jobs to track your progress in reducing duplicate records.

Duplicate Detection and Handling Process
Salesforce finds and handles duplicates using a combination of matching rules and duplicate rules. Duplicate rules and duplicate jobs specify matching rules that determine how duplicates are identified. Duplicate sets and reports list the duplicates found.

Customize Duplicate Management
Configure duplicate management to align with other customizations you make and detect duplicates missed by standard rules. Customize the user interface for handling duplicates: For example, block users from creating duplicates instead of just warning them, or run different duplicate rules for different user profiles. Customize the logic used to identify duplicates: For example, include a custom field in a matching rule, specify field mapping, or customize matching criteria on fields.

Considerations for Using Duplicate Management in the Salesforce Mobile App
Review considerations for using duplicate management features on a mobile device.

Manage Duplicates One at a Time

Give your sales team the tools they need for maintaining great relationships with customers, and keep your leads, accounts, and contacts clutter free. By activating duplicate rules and the Potential Duplicates component, you can control whether and when sales reps can create duplicate accounts, contacts, and leads. You can also give them permission to merge duplicate leads, business and person accounts, and contacts.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

USER PERMISSIONS NEEDED	
To view duplicate rules and matching rules:	View Setup and Configuration
To create, edit, delete, activate, and deactivate duplicate rules and matching rules:	Customize Application

▶ Take Control of Duplicates: Use Duplicate Rules and the Potential Duplicates Component (English only)

▶ Use Matching Rules to Hunt Down Duplicate Records (English only)

Stop Users from Creating Duplicate Records
When sales reps are in the process of creating or editing a record, alert them that the data they're entering duplicates an existing record. Or block sales reps from creating duplicate records altogether, whether or not they have access to the existing record. Activate duplicate rules and customize the settings.

Show Duplicate Records in Lightning Experience
If a record duplicates other records, you can alert sales reps when they open the record in Lightning Experience. Activate duplicate rules and add alerts to page layouts.

Show Duplicate Records in Salesforce Classic
If a record duplicates other records, you can alert sales reps when they open the record in Salesforce Classic by activating duplicate rules.

Stop Users from Creating Duplicate Records

When sales reps are in the process of creating or editing a record, alert them that the data they're entering duplicates an existing record. Or block sales reps from creating duplicate records altogether, whether or not they have access to the existing record. Activate duplicate rules and customize the settings.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

USER PERMISSIONS NEEDED	
To view duplicate rules and matching rules:	View Setup and Configuration
To create, edit, delete, activate, and deactivate duplicate rules and matching rules:	Customize Application

Standard duplicate rules are activated by default for business accounts, contacts, and leads. If your org was created before Summer '17, the rules came activated for you. To use duplicate rules for person accounts, first enable person accounts, and then activate person account matching and duplicate rules in Setup.

Here are three ways to use a duplicate rule to handle duplicates, using leads as an example.

- Alert sales reps when they're about to create a duplicate lead.
  In Setup, use the Quick Find box to find **Duplicate Rules**. Make sure that the Standard Lead Duplicate Rule is set to display the alert.

  With the Standard Lead Duplicate Rule activated, suppose that a sales rep starts creating a lead. The rep enters a phone number that matches the phone number of a lead already in Salesforce. The rule detects the duplicate and alerts the rep. The rep can choose to save the lead, because the rule is set to show an alert but not block duplicates. Or the rep can click **View Duplicates** to see existing records instead.

In this example, the lead the rep started to create is a duplicate of two other leads and a contact. Lightning Experience displays up to 15 duplicate records.

> **Note** In Salesforce Classic, when users create accounts using a quick action, they can't view duplicate records or save the new record if it's a duplicate. This condition applies even if you've set Action on Create to **Allow**.

- Block sales reps from creating duplicate leads.
  In the Standard Lead Duplicate Rule, select **Block** instead of **Allow**.
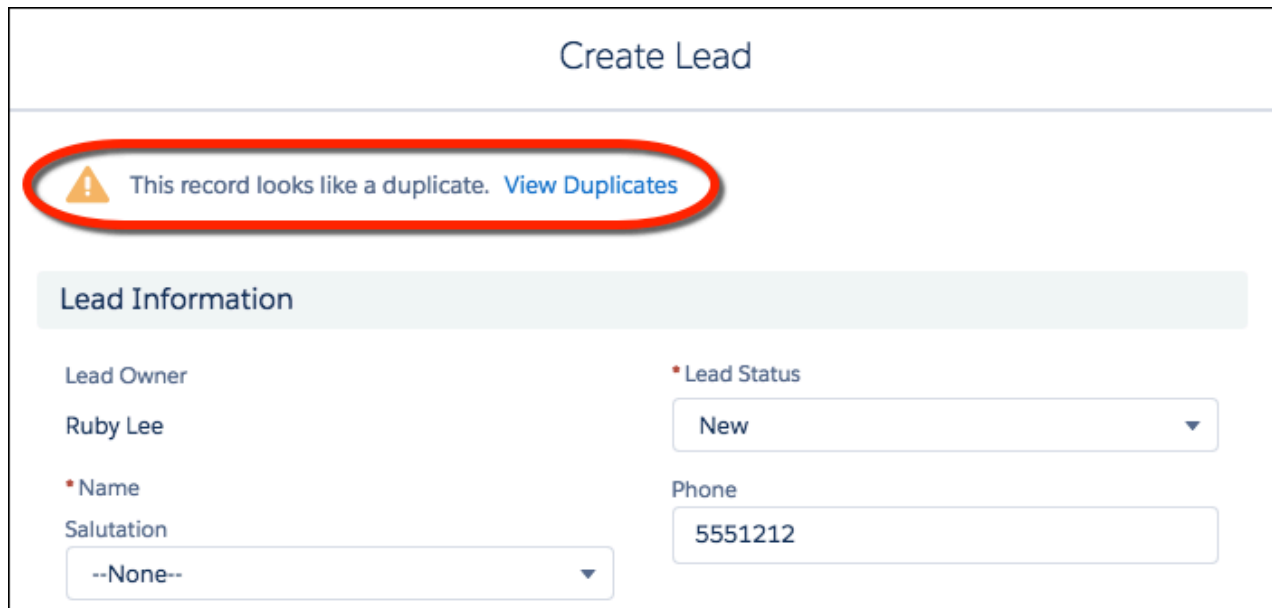
With the Standard Lead Duplicate Rule set to block duplicates, a rep can click to view duplicates of leads but can't save a new lead.
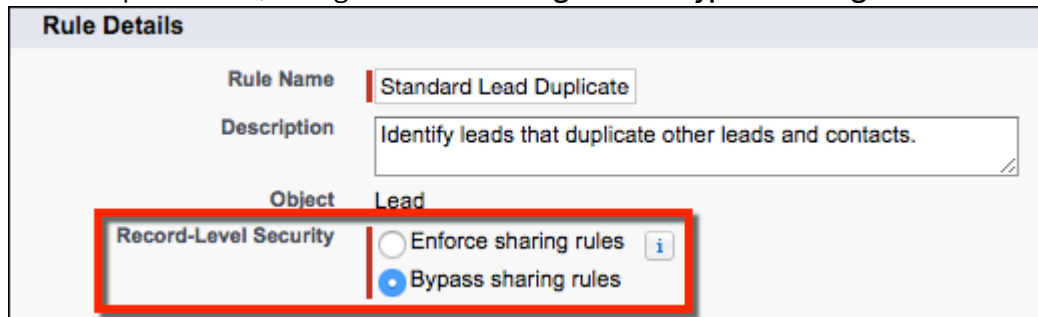
- Prevent reps from creating duplicates of records they don't have permission to view.
  In the duplicate rule, change **Enforce sharing rules** to **Bypass sharing rules**.

  When the duplicate rule is set to bypass sharing rules, it operates on all potential duplicates regardless of ownership. Suppose that a rep starts creating a record that duplicates a record the rep doesn't have access to. Salesforce alerts the rep and allows or blocks the duplicate according to your Action on Create setting. But Salesforce doesn't display the record the rep doesn't have access to.

See Also

Show Duplicate Records in Lightning Experience
Enable Person Accounts

Show Duplicate Records in Lightning Experience

If a record duplicates other records, you can alert sales reps when they open the record in Lightning Experience. Activate duplicate rules and add alerts to page layouts.

REQUIRED EDITIONS

Available in: Lightning Experience

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

To view duplicate rules and matching rules:	View Setup and Configuration
To create, edit, delete, activate, and deactivate duplicate rules and matching rules:	Customize Application

In orgs created in Summer '17 and later, standard duplicate rules and the Potential Duplicates component are set up and activated for business accounts, contacts, and leads. To use duplicate rules and the Potential Duplicates component for person accounts, first enable person accounts. Then activate person account matching rules and duplicate rules, and add the Potential Duplicates component to your person accounts layout.

You can alert sales reps to duplicates by showing a card on record home pages.
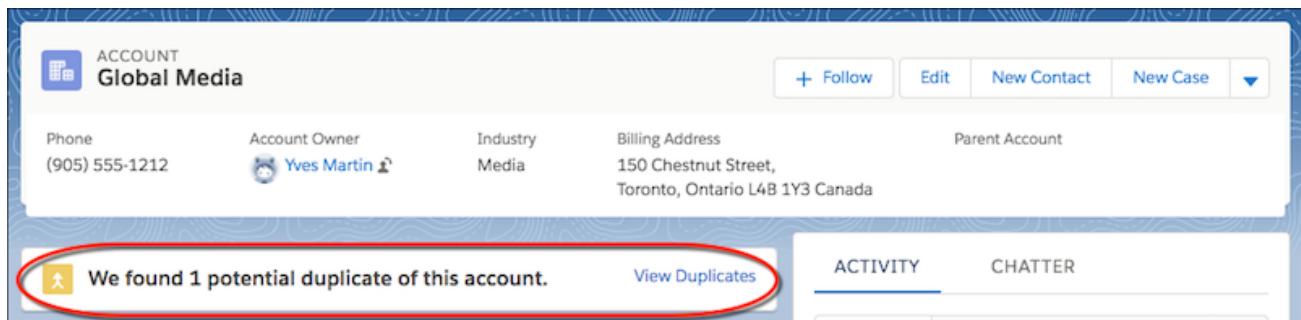
Or you can show a temporary toast message. You can also display both types of alerts.
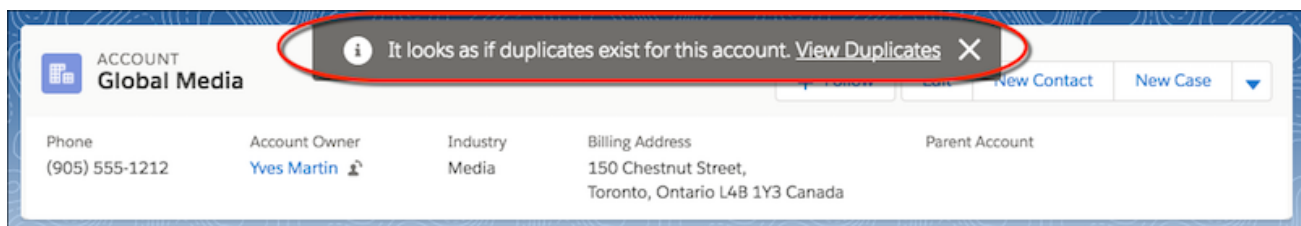
1. In Setup, use the Quick Find box to find **Lightning App Builder**.
2. On accounts, contacts, or leads, add the Potential Duplicates component.
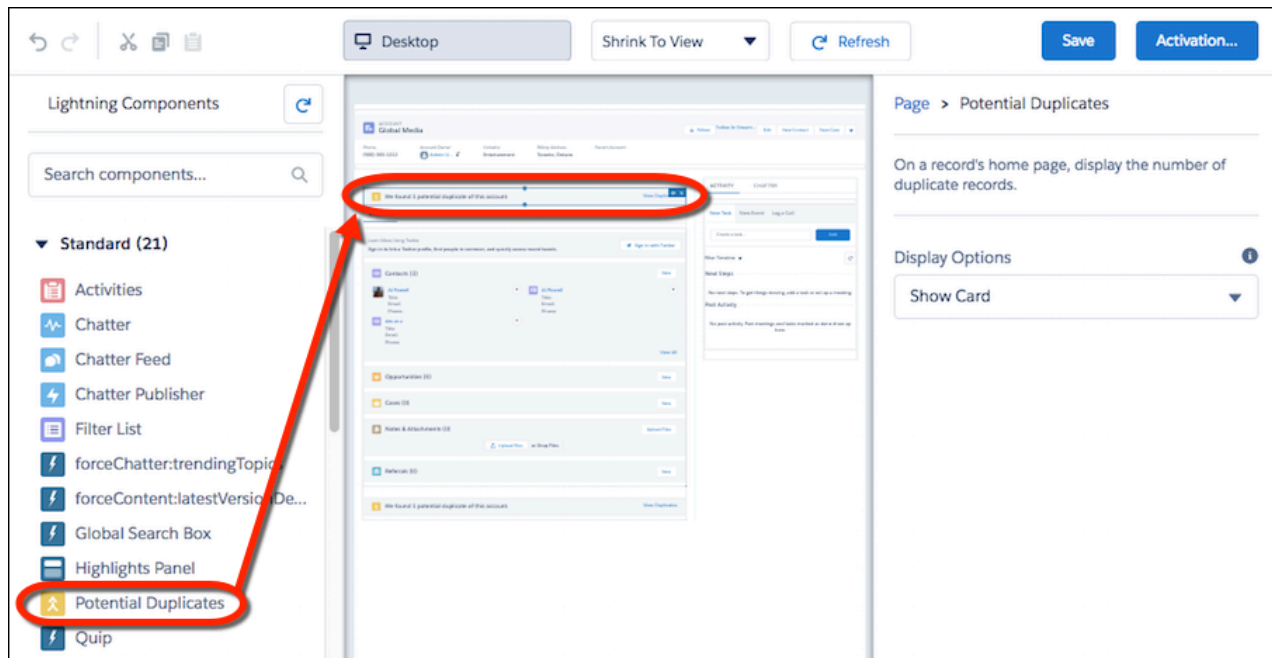
3. Select how you want to alert sales reps to duplicates.
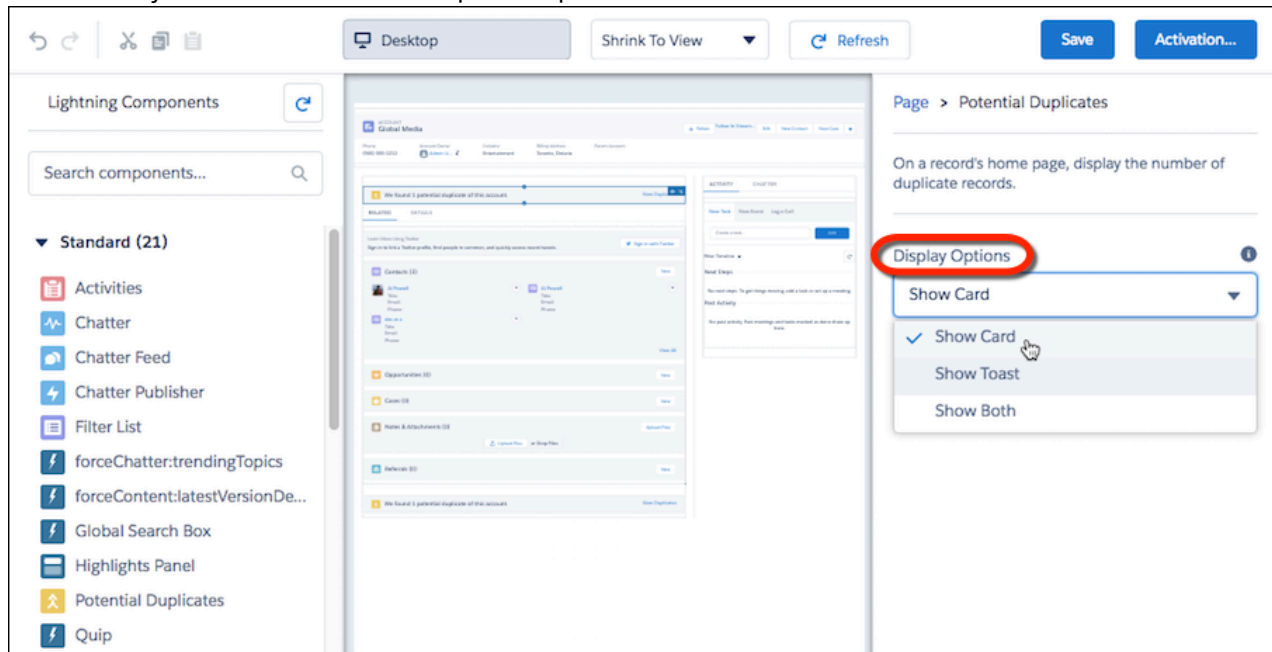
You can't add the Potential Duplicates component to custom objects. However, you can create rules to handle custom-object records that duplicate an account, contact, or lead.

Reps who have permission to merge duplicates can choose up to three records on the same object to merge.

See Also
    Stop Users from Creating Duplicate Records
    Guidelines for Merging Duplicate Accounts
    Considerations for Merging Duplicate Contacts
    Things to Know About Merging Duplicate Leads
    Enable Person Accounts

Show Duplicate Records in Salesforce Classic

If a record duplicates other records, you can alert sales reps when they open the record in Salesforce Classic by activating duplicate rules.

REQUIRED EDITIONS

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

### USER PERMISSIONS NEEDED

To view duplicate rules and matching rules:	View Setup and Configuration
To create, edit, delete, activate, and deactivate duplicate rules and matching rules:	Customize Application

- Reps see a message with the number of duplicates found. The number represents only the records that a rep has access to (1). If you've selected the **Bypass sharing rule** option, which compares all records regardless of a rep's access, the message indicates whether duplicates were detected. If a rep doesn't have access to any of the duplicates, the message indicates that there are duplicates but doesn't include the number.
- If your duplicate rule includes an alert, it appears beneath the message (2).
- If your duplicate rule lets reps save duplicates, they see the Save (Ignore Alert) button (3). If your duplicate rule blocks reps from saving duplicates, they see the Save button, but they can't save the record.
- The list of duplicates includes only records that a rep has access to (4). The fields shown include only

fields that the rep has access to, up to the first seven fields compared by the associated matching rule. The list displays a maximum of five records. If more than five duplicates are found, clicking **Show All >>** displays a full list of records, up to 100.

- The highlighted fields were defined as matches by the associated matching rule (5).

Manage Duplicates Globally

Find duplicates across your org by running duplicate jobs. Use reports to share job results with others, and use duplicate record sets to merge the duplicates. Use information about completed jobs to track your progress in reducing duplicate records.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

USER PERMISSIONS NEEDED

To run duplicate jobs:	Customize Application
To create or update custom report types:	Manage Custom Report Types
To delete custom report types:	Modify All Data
To view duplicate record sets and items:	View on accounts, contacts, or leads
To merge duplicate record items:	Edit and Delete on accounts, contacts, or leads
To view error logs:	View Setup and Configuration

Find Duplicates Across Your Org Using Duplicate Jobs in Lightning Experience
Use duplicate jobs with standard or custom matching rules to scan your Salesforce business or person accounts, contacts, or leads for duplicates.

Create Reports on Duplicate Records
Use duplicate record reports to fine-tune your duplicate and matching rules and share the results of duplicate jobs.

Manage Duplicates Using Duplicate Record Sets
A duplicate record set is a list of items identified as duplicates. It's created when a duplicate rule or job runs. Let your Lightning Experience users merge duplicates by granting them access to duplicate record sets.

View Error Logs for Duplicate Rules and Matching Rules
Troubleshoot system errors that prevent duplicate rules or matching rules from running. Error logs are deleted after 90 days.

See Also

Manage Duplicates One at a Time

Find Duplicates Across Your Org Using Duplicate Jobs in Lightning Experience

Use duplicate jobs with standard or custom matching rules to scan your Salesforce business or person accounts, contacts, or leads for duplicates.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic (not available in all orgs)

Available in: **Performance** and **Unlimited** Editions

USER PERMISSIONS NEEDED

To run duplicate jobs:

Customize Application

AND

View All Data

Run Duplicate Jobs in Lightning Experience
Run jobs to find duplicate business and person accounts, contacts, or leads across your org.

Things to Know About Duplicate Jobs
Review considerations for using duplicate jobs.

SEE ALSO

Manage Duplicates One at a Time

Run Duplicate Jobs in Lightning Experience

Run jobs to find duplicate business and person accounts, contacts, or leads across your org.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic (not available in all orgs)

Available in: **Performance** and **Unlimited** Editions

USER PERMISSIONS NEEDED

To run duplicate jobs:
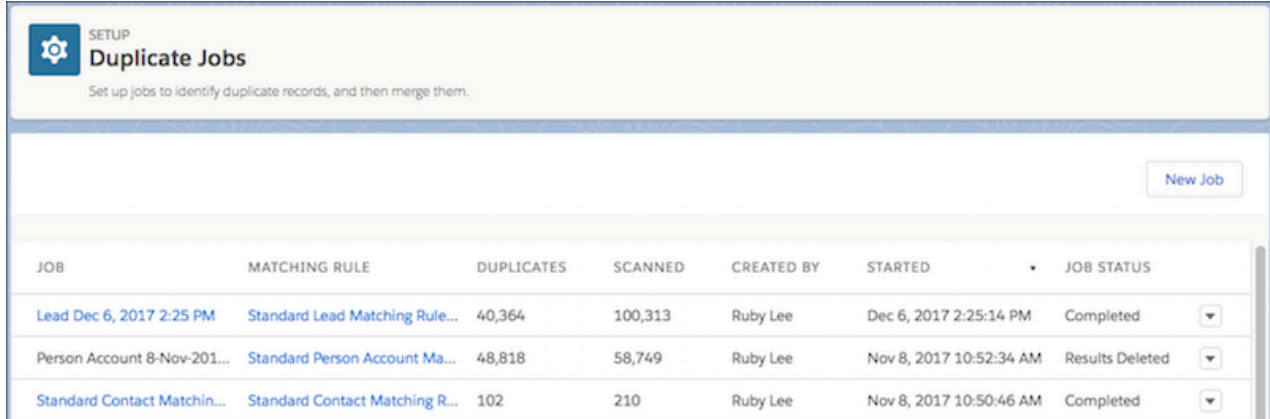
Customize Application

AND

View All Data
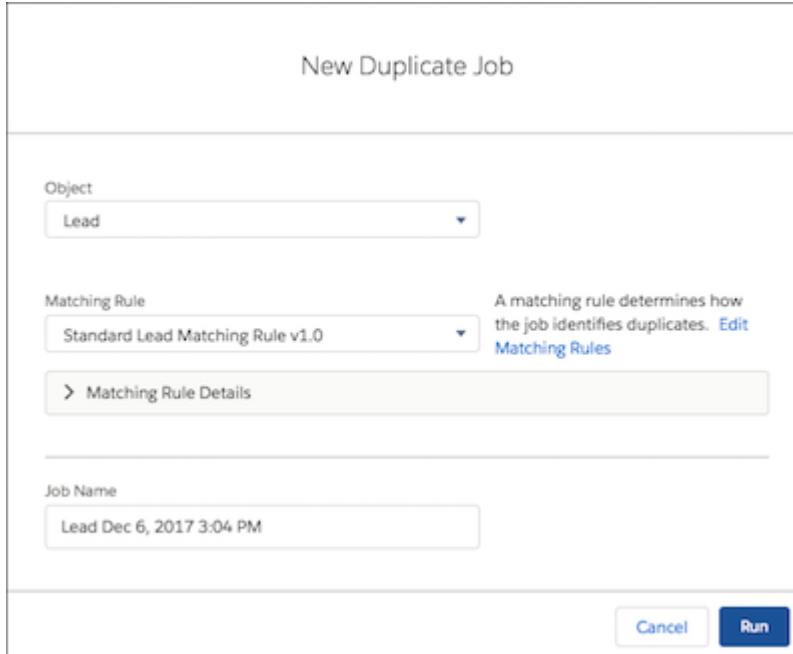
▶ Use Matching Rules to Hunt Down Duplicate Records (English only)

1. In Setup, use the Quick Find box to find **Duplicate Jobs**.
2. Click **New Job**.

3. Select an object. Select an existing matching rule or create one. Only matching rules for the object you select are available. If you like, edit the default job name. Click **Run**.
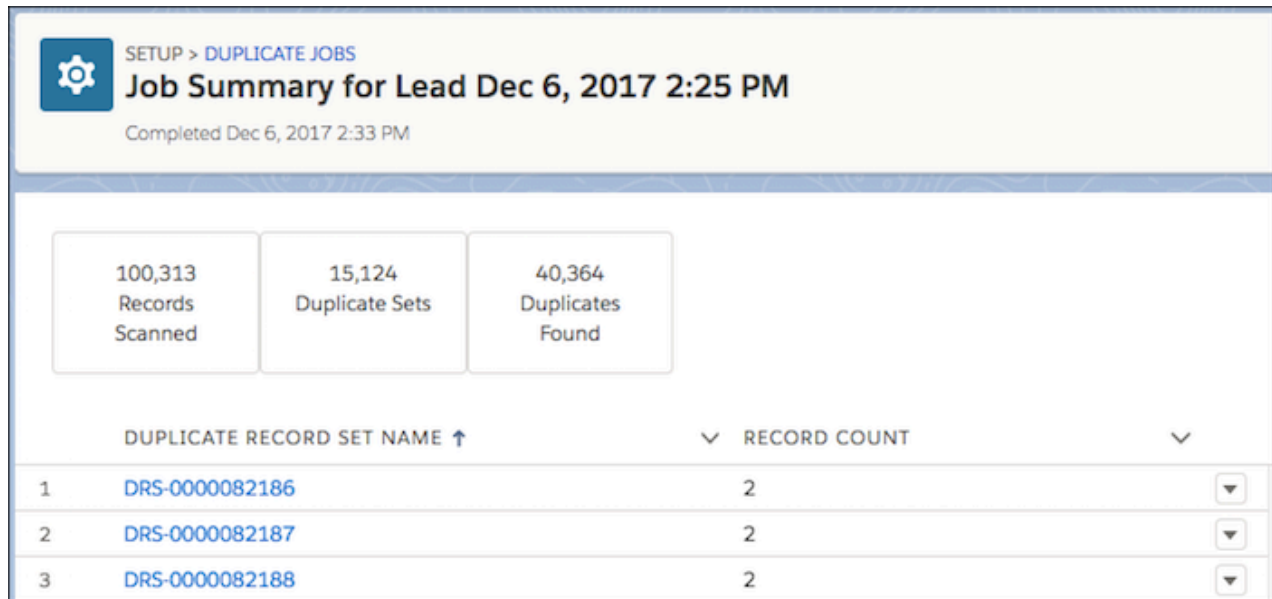
You can't delete or edit the name or description after creating a job. If you're working toward complying with various data protection and privacy regulations, consider excluding personal data from the name and description.

The job summary page shows the status of jobs. You're notified by email when a job is finished.
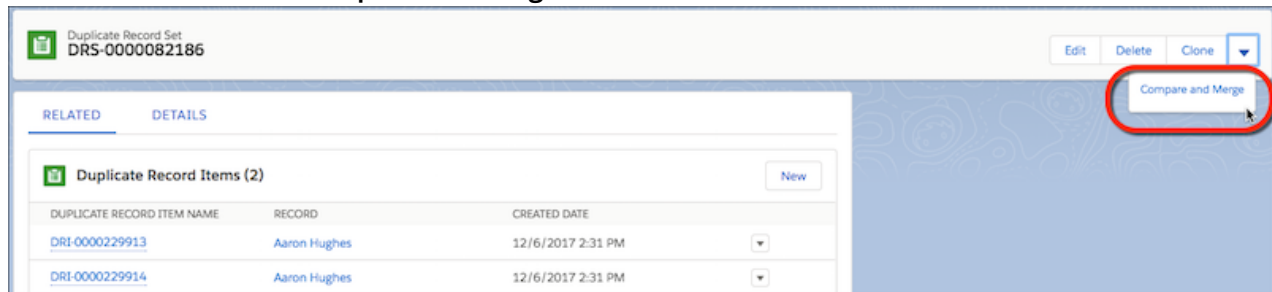
4. To rerun a job, click **New Job**, and then select the same object and matching rule.
5. To view and merge duplicates, open a job summary page, and then open a record set. Click the **Related** tab. Select the **Compare and Merge** action.

To let users merge duplicates in sets, give them access to duplicate record sets in Lightning Experience.
6. To share the results of a job, run a report on the duplicate record set generated by the job.

Things to Know About Duplicate Jobs

Review considerations for using duplicate jobs.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

Available in: **Performance** and **Unlimited** Editions

Compare and Merge Not Supported for Custom Objects
You can run duplicate jobs on custom objects, but you can't compare and merge duplicate records.

Job Limits
New jobs are blocked, or job results are deleted or overwritten, under the following

circumstances.
- Creating a job with the same settings (object and matching rule) as a completed job overwrites the earlier job. We alert you before running the job to confirm.
- Suppose that you run a job, and then you edit the matching rule you used. When you run another job using the rule, we delete the results of the first job without alerting you.
- When the total number of duplicates in all completed jobs reaches 1,000,000, you can't run new jobs. To run a job, delete the results of one or more jobs until the number of duplicate record items falls below 1,000,000.
- In an org with many records, duplicate jobs can fail.

When the results of a duplicate job are deleted, the information about the job is preserved: the number of records scanned, sets of duplicates found, and individual duplicates found.

Duplicate Record Sets and List Views

For each job you run, a list view of duplicate record sets is generated.
- If you delete the list view, the duplicate record sets and duplicate record items persist, and information about the job in Setup also persists.
- However, if you delete the job's results in Setup, the corresponding list view, duplicate record sets, and duplicate record items are all deleted.

Required Custom Fields on Duplicate Record Set or Duplicate Record Item Layouts

When duplicate record sets or items in a set generated by a duplicate job contain required custom fields, the job fails.

Encrypted Fields Used for Matching

If a field included in a matching rule used for a duplicate job is encrypted, the job fails.

Create Reports on Duplicate Records

Use duplicate record reports to fine-tune your duplicate and matching rules and share the results of duplicate jobs.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic (not available in all orgs)

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

USER PERMISSIONS NEEDED

To create or update custom report types:	Manage Custom Report Types
To delete custom report types:	Modify All Data

A duplicate records report can include the following records.

- Duplicates created when a rule alerts a user to a possible duplicate, but the user creates the duplicate anyway. (To generate this report, select the **Report** option in a duplicate rule.)
- Records manually added to a duplicate record set
- Records in duplicate record sets generated by duplicate jobs

1. In Setup, use the Quick Find box to find **Report Types**.
2. Create a report type, selecting **Account**, **Contact**, **Lead**, or **Duplicate Record Set** as the primary object. If you use person accounts, distinguish them from business accounts by adding the **Is Person Account** field in the field layout properties for your report type.
   If you're working toward complying with various data protection and privacy regulations, consider excluding personal data from the report name and description.
3. Click **Next**.
4. Relate **Duplicate Record Items** to the primary object that you selected. Save the report type.
5. Give your users access to the Duplicate Record Set and Duplicate Record Items objects. Then they can create reports based on the custom record type you've created.

> 👁 **Example** Let's say that you're using the standard duplicate rule for leads. You want to report on the duplicate leads that your rule detected. Create a custom report type with Lead as the primary object. Then create reports based on that report type. Or let's say that you want to share the results of duplicate jobs, or see how well your duplicate rules are working overall. Create a custom report type with Duplicate Record Sets as the primary object. Then create reports based on that report type.

See Also

[Manage Duplicates Using Duplicate Record Sets](#)
[Set Up a Custom Report Type](#)

Manage Duplicates Using Duplicate Record Sets

A duplicate record set is a list of items identified as duplicates. It's created when a duplicate rule or job runs. Let your Lightning Experience users merge duplicates by granting them access to duplicate record sets.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic ([not available in all orgs](#))
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

USER PERMISSIONS NEEDED	
To view duplicate record sets and items:	View on accounts, contacts, or leads
To merge duplicate record items:	Edit and Delete on accounts, contacts, or leads

You can grant access to duplicate record sets and duplicate record items to users with a Sales Cloud, Service Cloud, or Sales & Service Cloud license.

Duplicate record sets containing the results of duplicate jobs don't include a link to the job by default. To include the link, use Lightning App Builder to add the Parent field to your duplicate record set layout.

- View duplicate record sets.
    - In Lightning Experience, from the App Launcher, open **Duplicate Record Sets**.

        📝 **Note** In list views, duplicate record sets are displayed in Table view only.

    - In Salesforce Classic, click the Duplicate Record Sets tab.
- To manage duplicates that aren't surfaced by a duplicate rule, create a duplicate record set.
    - On a duplicate record set list view, click **New**.
    - Specify a duplicate rule (in the Duplicate Rule field) or a duplicate job (in the Parent field).
    - In Lightning Experience, in the Related tab, click **New**. In Salesforce Classic, on the duplicate record set detail page, click **New Duplicate Record Item**.
- In Lightning Experience only, merge duplicates in a set by selecting the **Compare and Merge** action.

To let users merge duplicates in sets, give them access to duplicate record sets in Lightning Experience.

See Also

Create Reports on Duplicate Records

View Error Logs for Duplicate Rules and Matching Rules

Troubleshoot system errors that prevent duplicate rules or matching rules from running. Error logs are deleted after 90 days.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic (not available in all orgs)
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

USER PERMISSIONS NEEDED	
To view error logs:	View Setup and Configuration

1. From Setup, use the Quick Find box to find **Duplicate Error Logs**.
2. View the error logs. Logs are displayed in a list view.

All Duplicate Error Logs

View: [All Duplicate Error Logs ⬍] Create New View

Help for this Page ❓

Object	Record	Duplicate Rule	Matching Rule	Error Message	Created Date ↓
Lead	Smith, Andy	Standard Lead Duplicate Rule	Standard Lead Matching Rule v1.0	Unable to report on duplicate records. DuplicateRecordItem : Required fields are missing: Duplicate Record Set.Account	11/7/2017 5:23 AM
Lead	Smith, Andy	Standard Lead Duplicate Rule	Standard Lead Matching Rule v1.0	Unable to report on duplicate records. DuplicateRecordItem : Required fields are missing: Duplicate Record Set.Account	11/7/2017 5:23 AM
Contact	Martinez, Kate	Standard Contact Duplicate Rule	Standard Contact Matching Rule v1.1	Unable to report on duplicate records. DuplicateRecordSet : Required fields are missing: [Account]	11/7/2017 5:22 AM
Contact	Martinez, Kate	Standard Contact Duplicate Rule	Standard Contact Matching Rule v1.1	Unable to report on duplicate records. DuplicateRecordSet : Required fields are missing: [Account]	11/7/2017 5:22 AM
Lead	Smith, Andy	Standard Lead Duplicate Rule	Standard Lead Matching Rule v1.0	Unable to report on duplicate records. DuplicateRecordItem : Required fields are missing: Duplicate Record Set.Account	10/24/2017 7:17 PM
Lead	Smith, Andy	Standard Lead Duplicate Rule	Standard Lead Matching Rule v1.0	Unable to report on duplicate records. DuplicateRecordItem : Required fields are missing: Duplicate Record Set.Account	10/16/2017 4:11 PM

👁 **Example** Here are some scenarios that can produce errors.

- The match engine used for fuzzy matching methods is temporarily unavailable. Matching rules that include fuzzy matching methods don't run.
- The Report option on duplicate rules is selected, but a report isn't generated because the system can't create a duplicate record set. (Reports on duplicates are based on duplicate record sets.)

Duplicate Detection and Handling Process

Salesforce finds and handles duplicates using a combination of matching rules and duplicate rules. Duplicate rules and duplicate jobs specify matching rules that determine how duplicates are identified. Duplicate sets and reports list the duplicates found.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

1. A Matching Rule Compares Records and Detects Duplicates

The matching rule specified in a duplicate rule or job can compare records on the same object, such as leads, or one other object. For example, a rule can compare leads that duplicate contacts.

A matching rule consists of an equation that determines how to compare the fields in a pair of records. Criteria on the fields determine how broadly a match is defined. Indexing and algorithms speed up the matching process.

When a matching rule is activated, one or more match keys are applied to existing records. The matching rule looks only for duplicates among records with the same match key. If two records don't share match keys, they aren't considered duplicates, and the matching algorithms aren't applied to them. This indexing process improves performance and returns a better set of match candidates.

2. A Duplicate Rule or Job Handles Duplicates

Duplicates can be detected when a sales rep creates, clones, or edits a record and a duplicate rule runs, or when you run a duplicate job. They can also be detected as part of other processes, such as importing or an API.

A duplicate rule alerts a sales rep and lists possible duplicates.

Duplicate job results list duplicates across an org.

3. Sets and Reports List Duplicates Found

Duplicate record sets list the duplicates found when duplicate rules or jobs run. Reports of duplicates are generated from these sets.

> 📝 **Note** The upper and lower case dotted I characters, or i-dot, found in languages such as Turkish and Azerbaijani aren't detected in duplicate matching. For example, the accounts "iTest" and a second record named "İTest" aren't identified as duplicates.

Customize Duplicate Management

Configure duplicate management to align with other customizations you make and detect duplicates missed by standard rules. Customize the user interface for handling duplicates: For example, block users from creating duplicates instead of just warning them, or run different duplicate rules for different user profiles. Customize the logic used to identify duplicates: For example, include a custom field in a matching rule, specify field mapping, or customize matching criteria on fields.

REQUIRED EDITIONS

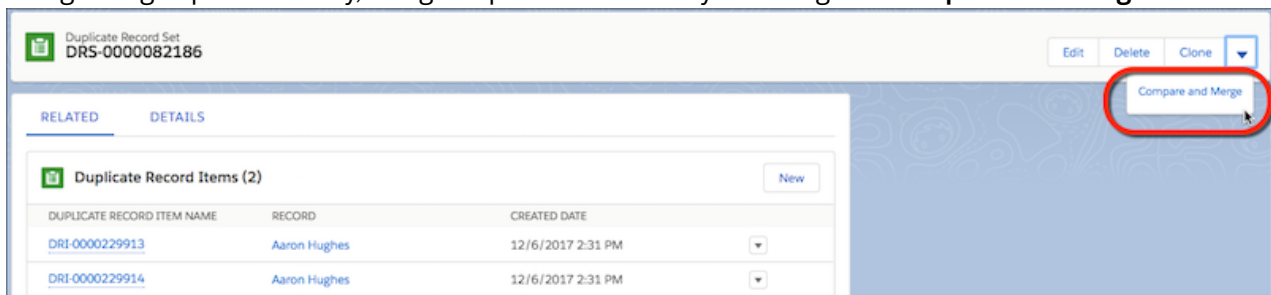| |
|---|
| Available in: Lightning Experience and Salesforce Classic |
| Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions |

USER PERMISSIONS NEEDED	
To create, edit, or delete duplicate rules and matching rules:	Customize Application
To activate and deactivate duplicate rules and matching rules:	Customize Application

Duplicate Rules

A duplicate rule defines what happens when a user views a record with duplicates or starts creating a duplicate record. Salesforce provides standard duplicate rules for business and person accounts, contacts, and leads. You can also create duplicate rules.

Matching Rules

A matching rule defines how duplicate records are identified in duplicate rules and duplicate jobs. Salesforce provides standard matching rules for business and person accounts, contacts, and leads. You can also create custom matching rules.

Duplicate Rules

A duplicate rule defines what happens when a user views a record with duplicates or starts creating a duplicate record. Salesforce provides standard duplicate rules for business and person accounts, contacts, and leads. You can also create duplicate rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

Customize Duplicate Rules
Manage duplicates more effectively by adjusting the settings in standard duplicate rules or creating custom rules.

Things to Know About Duplicate Rules
Review considerations for using and customizing duplicate rules.

Standard Duplicate Rules
Each standard duplicate rule includes a corresponding standard matching rule that determines how records are identified as duplicates.

See Also
    Matching Rules
    Enable Person Accounts

Customize Duplicate Rules

Manage duplicates more effectively by adjusting the settings in standard duplicate rules or creating custom rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

USER PERMISSIONS NEEDED

To create, edit, or delete duplicate rules:	Customize Application
To activate and deactivate duplicate rules:	Customize Application
To view duplicate rules:	View Setup and Configuration

To see the duplicates detected by a duplicate rule, users must have Read access to the object defined in the rule.

1. From Setup, use the Quick Find box to find **Duplicate Rules**.
2. To edit a rule, click the rule name, and click **Edit**. To create a rule, click **New Rule**, and select the object you want the rule to apply to.
3. Enter the rule details, including a name, description, and record-level security settings.
   If you're working toward complying with various data protection and privacy regulations, consider excluding personal data from the name and description.
4. Select the actions you want to occur when a user starts creating a duplicate.
   The default actions are to alert users when they start to create a duplicate, and report on duplicates created when users create or edit records. You can customize the provided alert text.

5. In the Matching Rules section, select the object to compare records on. Then select the matching rule that determines how records are identified as duplicates.
   The list includes all available matching rules for the selected object.

   > **Tip** If you want to use a new custom matching rule, we recommend that you finish creating your duplicate rule before selecting **Create New Matching Rule**. Then create and activate the matching rule. The new matching rule is automatically associated with the duplicate rule.

6. Select the field mapping for each matching rule, if needed.
   If the matching rule compares records on two different objects or uses custom fields, consider the following:
   • Decide how you want to compare the fields on the first object to the fields on the second object. For example, map a custom field called Work Email to the standard Email field.
   • If two text fields with different maximum lengths are compared, data in the fields can be truncated before a match is determined.

7. If you want your duplicate rule to run only when specific conditions are met, enter the conditions. For example, the rule runs only if a user with a certain profile or role creates a record. Or set a condition for the rule to run only if the record includes a specific country, state, or province.

8. Save and activate the rule.
    For the activation to succeed, all associated matching rules must be active.

9. If you have more than one active duplicate rule for a particular object, consider adjusting the order in which the rules are processed. Reorder rules by clicking **Reorder** on any rule's detail page.

> 💡 **Tip** If the first duplicate rule finds a match for a particular record, subsequent duplicate rules skip that record. Arrange your duplicate rules so that rules with the Block option run before rules with the Allow option.

Things to Know About Duplicate Rules

Review considerations for using and customizing duplicate rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

Number of Duplicate and Matching Rules
- You can use up to five active duplicate rules per object.
- You can add up to three matching rules in each duplicate rule, with one active matching rule per object. When you use multiple duplicate rules, you can include up to five active matching rules per object.

Duplicate Record Sets Generated by Selecting the Report Option

If you select the Report option for duplicates identified using a duplicate rule, and a user saves a record identified as a duplicate, the following happens.
- The saved record and the maximum number of duplicates are reassigned to a new or existing duplicate record set. For each matching rule run on a record, up to 100 duplicates can be reassigned to a duplicate record set. A matching rule can be associated with a duplicate rule or a duplicate job.
- The saved record and each of its duplicates are listed as duplicate record items in the duplicate record set.
- If the duplicate rule looks for duplicates across objects (for example, contacts that duplicate leads), the duplicate record set includes duplicates on the other objects.

If a duplicate lead is converted before the duplicate record set is created, the duplicate record set doesn't include the converted lead.

Records with More Than 100 Matches

Match keys help to increase the performance of duplicate rules through a preliminary

comparison that narrows the matches to the 100 most likely duplicate records. Then the rule
applies the matching equation only to those likely matches.

Impact of User Access on Rules

If a user who updates a record doesn't have access to one or more fields referenced in a
matching rule, then the duplicate rule doesn't work as expected. For example, suppose that
standard users don't have access to the account name field. Then an admin creates a matching
rule that depends on the field. If an admin updates a record, the duplicate rule runs as expected.
But when a standard user updates the same record, the rule doesn't identify duplicates.

How Rules Operate on Edited Fields

You can configure a duplicate rule to perform an action when a record is created or edited.
However, the rule only runs on edited records when the edited fields are included in the
associated matching rule. For example, if a sales rep edits a custom field, the rule doesn't run
unless you've created a matching rule that includes the custom field.

Global Picklist Value Sets

Global picklist values aren't supported in duplicate rules.

Custom Picklists

Custom picklist fields aren't supported in matching rules used in cross-object duplicate rules. For
example, you can't use a custom picklist field on the lead object in a rule that matches contacts
which duplicate leads.

Changes to a Rollup Summary Field Value

When a rollup summary field value changes, duplicate rules run, and the Allow option (to save a
duplicate record) isn't supported.

Conditions Under Which Duplicate Rules Don't Run

- Records are created using Quick Create or Community Self-Registration.
- Leads are converted to accounts or contacts, and **Use Apex Lead Convert** isn't enabled.
- Records are restored with the Undelete button.
- Records are added using Lightning Sync or Einstein Activity Capture.
- Records are manually merged.
- A Self-Service user creates records, and the rules include conditions based on the User object.
- Duplicate rule conditions are set for lookup relationship fields and records but no value for these
  fields has been saved. For example, a condition specifies that a duplicate rule runs when a
  campaign doesn't contain "Salesforce." If you then add a record with no value for the Campaign
  field, the duplicate rule doesn't run.

Conditions Under Which Duplicate Rule Settings Are Overridden

In the following situations, no alert is shown and users can't save records.
- Records are added using the data import tools.
- A person account is converted to a business account, and the newly created business account

matches an existing business account.
- Records are added or edited using Salesforce APIs.

Timing of Saves

Suppose that multiple records are saved simultaneously and your duplicate rule is set to block or alert sales reps. The records aren't compared with each other. They're compared only with records already in Salesforce. This behavior doesn't affect the Report option, and duplicate record sets do include records that match other records saved simultaneously.

Translation Workbench

The Translation Workbench doesn't support the customizable alert text in duplicate rules.

See Also

Manage Duplicates Using Duplicate Record Sets
Create Reports on Duplicate Records

Standard Duplicate Rules

Each standard duplicate rule includes a corresponding standard matching rule that determines how records are identified as duplicates.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

Standard Account Duplicate Rule
The standard account duplicate rule defines what happens when a user views an account with duplicates or starts to create a duplicate account. It's activated by default.

Standard Person Account Duplicate Rule
The standard person account duplicate rule defines what happens when a user views a person account with duplicates or starts to create a duplicate person account. To use this rule, enable person accounts, and then activate the standard person account matching and duplicate rules in Setup.

Standard Contact Duplicate Rule
The standard contact duplicate rule defines what happens when a user views a duplicated contact or starts to create a record that duplicates a contact. If your org was created in Summer '17 or later, this duplicate rule includes a cross-object matching rule: It matches contacts that duplicate other contacts and leads that duplicate contacts. If your org was created before Summer '17, you can get the same functionality by activating a new duplicate rule available in Setup. Otherwise, your default rule matches only contacts that duplicate other contacts.

Standard Lead Duplicate Rule
The standard lead duplicate rule defines what happens when a user views a lead with duplicates or starts to create a record that duplicates a lead. If your org was created in Summer '17 or later, this

duplicate rule includes a cross-object matching rule: It matches leads that duplicate other leads and contacts that duplicate leads. If your org was created before Summer '17, you can get the same functionality by activating a new duplicate rule available in Setup. Otherwise, your default rule matches only leads that duplicate other leads.

Standard Account Duplicate Rule

The standard account duplicate rule defines what happens when a user views an account with duplicates or starts to create a duplicate account. It's activated by default.

Rule Details

Field	Value
Rule Name	Standard Account Duplicate Rule
Description	Handle accounts that duplicate other accounts.
Object	Account
Default Record-Level Security Setting	Enforce Sharing Rules

Actions

An action specifies what happens when a user starts creating a duplicate record.

Field	Value
Default Action On Create	Allow: The user is alerted but allowed to create the record.
Default Action On Edit	Allow: You can generate a report of duplicates created when this rule runs.
Customizable Alert Text	Use one of these records?

Matching Rules Included in This Duplicate Rule

Field	Value
Matching Rule	Standard Account Matching Rule
Description	Match accounts that duplicate other accounts.
Default Field Mapping	Mapping Selected

See Also

Standard Account Matching Rule

Standard Person Account Duplicate Rule

The standard person account duplicate rule defines what happens when a user views a person account with duplicates or starts to create a duplicate person account. To use this rule, enable person accounts, and then activate the standard person account matching and duplicate rules in Setup.

Duplicate Rule

Setting	Value
Rule Name	Standard Person Account Duplicate Rule
Description	Handle person accounts that duplicate other person accounts.
Object	Person Account
Default Record-Level Security Setting	Enforce Sharing Rules

Actions

Action options specify what happens when a user starts creating a duplicate record.

Setting	Value
Default Action On Create	Allow: The user is alerted but allowed to create the record.
Default Action On Edit	Allow: You can generate a report of duplicates created when this rule runs.
Customizable Alert Text	Use one of these records?

Matching Rules

This duplicate rule is based on the following matching rule.

Setting	Value
Matching Rule	Standard Person Account Matching Rule
Default Field Mapping	Mapping Selected

See Also

Enable Person Accounts

Standard Contact Duplicate Rule

The standard contact duplicate rule defines what happens when a user views a duplicated contact or starts to create a record that duplicates a contact. If your org was created in Summer '17 or later, this duplicate rule includes a cross-object matching rule: It matches contacts that duplicate other contacts and leads that duplicate contacts. If your org was created before Summer '17, you can get the same functionality by activating a new duplicate rule available in Setup. Otherwise, your default rule matches only contacts that duplicate other contacts.

Rule Details

Rule Name	Standard Account Duplicate Rule
Description	Handle contacts that duplicate other contacts and leads that duplicate contacts.
Object	Contact
Default Record-Level Security Setting	Enforce Sharing Rules

Actions

An action specifies what happens when a user starts creating a duplicate record.

Default Action On Create	Allow: The user is alerted but allowed to create the record.
Default Action On Edit	Allow: You can generate a report of duplicates created when this rule runs.
Customizable Alert Text	Use one of these records?

Matching Rules Included in This Duplicate Rule

Matching Rules	Standard Contact Matching Rule, Standard Lead Matching Rule
Description	Match contacts that duplicate other contacts and leads that duplicate contacts.
Default Field Mapping	Mapping Selected

See Also

   Standard Contact Matching Rule and Standard Lead Matching Rule

Standard Lead Duplicate Rule

The standard lead duplicate rule defines what happens when a user views a lead with duplicates or starts to create a record that duplicates a lead. If your org was created in Summer '17 or later, this duplicate rule includes a cross-object matching rule: It matches leads that duplicate other leads and contacts that duplicate leads. If your org was created before Summer '17, you can get the same functionality by activating a new duplicate rule available in Setup. Otherwise, your default rule matches only leads that duplicate other leads.

Rule Details

Rule Name	Standard Lead Duplicate Rule
Description	Handle leads that duplicate other leads and contacts that duplicate leads.
Object	Lead
Default Record-Level Security Setting	Enforce Sharing Rules

Actions

An action specifies what happens when a user starts creating a duplicate record.

Default Action On Create	Allow: The user is alerted but allowed to create the record.
Default Action On Edit	Allow: You can generate a report of duplicates created when this rule runs.
Customizable Alert Text	Use one of these records?

Matching Rules Included in This Duplicate Rule

Matching Rules	Standard Lead Matching Rule, Standard Contact Matching Rule
Description	Match leads that duplicate other leads and contacts that duplicate leads.
Default Field Mapping	Mapping Selected

See Also
Standard Contact Matching Rule and Standard Lead Matching Rule

Matching Rules

A matching rule defines how duplicate records are identified in duplicate rules and duplicate jobs. Salesforce provides standard matching rules for business and person accounts, contacts, and leads. You

can also create custom matching rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

Customize Matching Rules
Find more duplicates by creating custom matching rules.

Things to Know About Matching Rules
Find out how matching rules work, review what to know when you customize matching rules, and look at some examples to get started. Or go further: Do a deep-dive on matching criteria, methods, algorithms, match keys, and normalization criteria.

Standard Matching Rules
You can use the provided standard matching rules with duplicate rules and duplicate jobs. You can't edit these standard matching rules, but you can create custom matching rules.

See Also
Duplicate Rules
Run Duplicate Jobs in Lightning Experience
Enable Person Accounts

Customize Matching Rules

Find more duplicates by creating custom matching rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

USER PERMISSIONS NEEDED	
To create, edit, or delete matching rules:	Customize Application
To activate and deactivate matching rules:	Customize Application
To view matching rules:	View Setup and Configuration

1. From Setup, use the Quick Find box to find **Matching Rules**.
2. If editing an existing matching rule, make sure that the rule is inactive.
3. Click **New Rule** or **Edit**.
4. Apply the matching rule to an object.
5. Enter a name and description for the rule.
   If you're working toward complying with various data protection and privacy regulations, consider

excluding personal data from the name and description.

6. Enter the matching criteria.

The matching criteria define which fields to compare and how. To add fields (up to 10 total) or adjust the matching equation (for example, to change an AND expression to an OR expression), add filter logic.

7. Save and activate the rule.

The activation process can take some time. You're notified by email when your matching rule is ready to use.

When a matching rule is active, you can use it with duplicate rules and duplicate jobs.

See Also

Manage Duplicates One at a Time
Manage Duplicates Globally
Matching Criteria in Matching Rules

Things to Know About Matching Rules

Find out how matching rules work, review what to know when you customize matching rules, and look at some examples to get started. Or go further: Do a deep-dive on matching criteria, methods, algorithms, match keys, and normalization criteria.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

Things to Know Before You Customize Matching Rules
Review considerations for customizing matching rules.

Matching Rule Examples
Review these examples to understand how records are compared and evaluated as duplicates.

Matching Criteria in Matching Rules
A matching rule applies criteria to determine how closely a field on a new or edited record matches the same field on an existing record. Standard matching rules include predefined criteria. When you create a custom matching rule, you define the criteria.

Matching Methods Used in Matching Rules
The matching method determines how a specific field in a record is compared to the same field in another record. Each matching method is defined by normalization criteria, match key definitions, and matching algorithms.

Matching Algorithms Used with Matching Methods
The matching method and its corresponding matching algorithms are part of the matching rule's matching criteria. They help determine how a specific field in one record is compared to the same field in another record and whether the fields are considered matches.

How Match Keys Are Generated and Used in Matching Rules

When a matching rule runs, it applies one or more match key formulas before applying a comprehensive matching equation. Match keys help to increase the performance of duplicate rules through a preliminary comparison that narrows the matches to the 100 most likely duplicate records. Then the rule applies the matching equation only to those likely matches.

Normalization Criteria for Match Keys

As part of the process of creating match key values, matching rule field values are normalized. How a field value is normalized depends on several factors, including the matching method for that field as specified in the matching rule. In addition, some commonly used fields are normalized to optimize duplicate detection.

Things to Know Before You Customize Matching Rules

Review considerations for customizing matching rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic	
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions	

Consideration	Description
Limits	• Up to five matching rules can be activated or deactivated at a time. • Up to five active matching rules are allowed per object. • Up to 25 total active matching rules are allowed. • Up to 100 total matching rules are allowed (both active and inactive). • Only one lookup relationship field is allowed per matching rule.
Order of Evaluation of Certain Fuzzy Matching Method Segments	Suppose the following: a matching rule includes a filter with logic that includes an OR operator, and the segments before and after the operator include the same field with a fuzzy matching method. The rule evaluates only the filter segment closest to the end, and ignores the others. As another example, suppose that a filter criterion has 1 = account name (fuzzy), 2 = address (exact), 3 = phone (exact), and 4 = zipcode (exact). If filter logic is (1 AND 2) OR (1 AND 3) OR (1 AND 4), the rule evaluates only (1 AND 4) and ignores both (1 AND 2) and (1 AND 3). If filter logic is (1 AND 2) OR (1 AND 3) OR (1 AND 4) OR (2 AND 4), the rule evaluates (1 AND 4) OR (2 AND 4). Both (1 AND 2) and (1 AND 3) are ignored.

Consideration	Description
	To avoid skipped logic, create a matching rule for each OR segment that includes the same fuzzy fields. Use either fuzzy or exact matching. Duplicates aren't detected if you include both matching types in one rule.
International Data	Standard and custom matching rules that use fuzzy matching methods support only Latin characters. If you're using international data, we recommend using the exact matching method with your matching rules.
Lookup Fields	If the value of a lookup field is a person account and the matching rule includes a contact lookup field, the matching rule isn't applied. All contact lookup fields, except Reports To on the Contact object, contain both contacts and person accounts. You can configure a lookup filter to exclude person accounts. To match on person account values, use an account lookup field instead.
Records in Hierarchies	If the record chosen as primary is below another selected duplicate in a hierarchy, you can't finish merging. Choose a different primary record or edit the Parent Account or Reports To value on one of the records.
Fields That Become Unavailable	If a field on an object is no longer available in your org, it can cause matching rules with mappings to this field to be ignored. When the fields in your org change, check all duplicate rule field mappings for an object.
Shield Platform Encryption	Standard and custom matching rules that include fields with Shield Platform Encryption detect duplicates as long as those fields are encrypted deterministically. Probabilistic encryption isn't supported. When you rotate your key material, you must update custom matching rules that reference encrypted fields. After you rotate your key material, deactivate and then reactivate the affected matching rules. Then contact Salesforce to request the background encryption process. When the background encryption process is finished, your matching rules can access the data encrypted with your active key material. Service protections ensure that loads are balanced across the system. The matching service searches for match candidates until they find all matches or up to 200 matches. With Shield Platform Encryption, the service search maximum is 100 candidates. With encryption, you could find fewer or no possible duplicate records. Duplicate jobs aren't supported.

Matching Rule Examples

Review these examples to understand how records are compared and evaluated as duplicates.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

👁 **Custom Lead Matching Rule with Fuzzy Matching Methods**

Matching Criteria

	Field	Matching Method
	Field	**Matching Method**
1	**Company**	*Fuzzy: Company Name*
2	**Email**	*Exact*
3	**Phone**	*Fuzzy: Phone*
	Matching equation is (**Company** OR **Email**) AND (**Phone**)	

Based on these matching criteria, here's how matching works.

1. Match key values are generated for existing leads. Based on the matching equation and the specified matching methods, two match keys are created. From these keys, match key values are generated.

Match Keys

Matching Equation in Standardized Format	Match Key	Sample Matching Field Values	Sample Match Key Values
(**Company** AND **Phone**) OR	Company (2,6) Phone	**Company** = Elite Sport**Phone** = 415-555-1234	elitesport41555 55
(**Email** AND **Phone**)	Email Phone	**Email** = john.doe@elitesport.com**Phone** = 415-555-1234	john.doe@elit esport.com41 55555

2. Match key values for the new record are generated. The values are generated when the new record is saved.

New Record

Matching Field Values	Match Key Values
Company = Elite Sports**Email** = john.doe@elitesport.com**Phone** = 1-415-555-1234	elitesport415555john.doe@elitesport.com4155 55

3. Match key values for the new record are compared with values from existing records.

Existing Records Compared with New Record

Record	Matching Field Values	Match Key Values	Match?
1	**Company** = Elite Sports**Email** = john.doe@elitesports.com**Phone** = 1-415-555-1234	elitesports415555john.doe@elitesports.com415555	No. Not considered a duplicate.
2	**Company** = Elite Sport**Email** = john.doe@elitesport.com**Phone** = 1-415-555-1234	elitesport415555john.doe@elitesport.com415555	Yes. The first match key values don't match. However, the second match key values are identical, so the record is considered a potential duplicate. Only one match key value match is needed.

4. Determine if the new record is a potential duplicate. Does the new record have the same match key value as an existing record?
   - Yes, the new record is considered a potential duplicate. It's evaluated further using other matching resources, including matching algorithms.
   - No, the new record isn't considered a duplicate.

👁 **Custom Contact Matching Rule with Exact Matching Methods**

Matching Criteria

	Field	Matching Method
1	**City**	*Exact*
2	**Email**	*Exact*
3	**Phone**	*Exact*
	Matching equation is (**City** OR **Email**) AND (**Phone**)	

Based on these matching criteria, here's how matching works.

1. Match key values are generated for existing contacts. Based on the matching equation and the specified matching methods, two match keys are created. From these keys, match key values are generated.

Match Key

Matching Equation in Standardized Format	Match Key	Sample Matching Field Values	Sample Match Key Values
(**City** AND **Email**) OR	City Email	**City** = San Francisco**Email** = john.doe@elitesports.com	sanfranciscojohn.doe@elitesports.com
(**City** AND **Phone**)	City Phone	**City** = San Francisco**Phone** = 415-555-1234	sanfrancisco4155551234

2. Match key values for the new record are generated. The values are generated when the new record is saved.

New Record

Matching Field Values	Match Key Values
City = San Francisco**Email** = john.doe@elitesports.com**Phone** = 415-555-1234	sanfranciscojohn.doe@elitesports.comsanfrancisco4155551234

3. Match key values for the new record are compared with values from existing records.

Existing Records Compared with New Record

Record	Matching Field Values	Match Key Values	Match?
1	**City** = San Francisco**Email** = john.doe@elitesports.com**Phone** = 1-415-555-1234	sanfranciscojohn.doe@elitesports.comsanfrancisco4155551234	No. Not considered a duplicate.
2	**City** = San Francisco**Email** = john.doe@elitesports.com**Phone** = 1-415-555-1111	sanfranciscojohn.doe@elitesports.comsanfrancisco4155551234	Yes. The first match key values are identical, so the record is considered a potential duplicate. Only one match key value match is needed.

4. Determine if the new record is a potential duplicate. Does the new record have the same match key value as an existing record?
   - Yes–The new record is considered a potential duplicate. It's evaluated further using other matching resources, including matching algorithms.
   - No–The new record is not considered a duplicate.

Although this matching rule is within the field limit, it exceeds the row limit of 10 when written in the standardized format. Therefore, it can't be saved. Refine the matching rule so that it uses fewer OR

operators within groupings.

👁 **Example** You get an error that your matching rule uses too many OR operators within groupings.
The error is generated because a matching rule has a limit of 10 fields arranged into an equation.
When a matching rule is saved, the equation is rewritten into a standardized format that translates
the OR statements to AND statements. The standardized format has a limit of 10 rows.Suppose that
your matching rule includes the following equation.(Field 1 OR Field 2) AND(Field 3 OR Field 4)
AND(Field 5 OR Field 6) AND(Field 7 OR Field 8)It's rewritten as follows. Although this matching rule
is within the field limit, it exceeds the row limit of 10 when written in the standardized format.
Therefore, it can't be saved. Refine the matching rule so that it uses fewer OR operators within
groupings.(Field 1 AND Field 3 AND Field 5 Field AND 7) OR(Field 1 AND Field 3 AND Field 5 AND
Field 8) OR(Field 1 AND Field 3 AND Field 6 AND Field 7) OR(Field 1 AND Field 3 AND Field 6 AND
Field 8) OR(Field 1 AND Field 4 AND Field 5 AND Field 7) OR(Field 1 AND Field 4 AND Field 5 AND
Field 8) OR(Field 1 AND Field 4 AND Field 6 AND Field 7) OR(Field 1 AND Field 4 AND Field 6 AND
Field 8) OR(Field 2 AND Field 3 AND Field 5 AND Field 7) OR(Field 2 AND Field 3 AND Field 5 AND
Field 8) OR(Field 2 AND Field 3 AND Field 6 AND Field 7) OR(Field 2 AND Field 3 AND Field 6 AND
Field 8)OR(Field 2 AND Field 4 AND Field 5 AND Field 7) OR(Field 2 AND Field 4 AND Field 5 AND
Field 8) OR(Field 2 AND Field 4 AND Field 6 AND Field 7) OR(Field 2 AND Field 4 AND Field 6 AND
Field 8)

Matching Criteria in Matching Rules

A matching rule applies criteria to determine how closely a field on a new or edited record matches the
same field on an existing record. Standard matching rules include predefined criteria. When you create a
custom matching rule, you define the criteria.

REQUIRED EDITIONS

🛑 **Important** Where possible, we changed noninclusive terms to align with our company value of
Equality. We maintained certain terms to avoid any effect on customer implementations.

Available in: Lightning Experience and Salesforce Classic

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

Criterion	Definition	Automatically Defined for Custom Matching Rules
Field	Indicates which field to compare. When selecting fields, keep the following in mind.	

Criterion	Definition	Automatically Defined for Custom Matching Rules
	• The available fields depend on which object the matching rule applies to and include both standard and custom fields. • The supported input field types are email, lookup relationship, master-detail relationship, number, phone, standard picklists, custom picklists (single-select only), text, and URL. • You can't use an auto-numbered lookup or master-detail relationship field in a matching rule. • If you enable state and country/territory picklists, we recommend using State/Province Code and Country Code in your matching rules. These fields yield better results than the state and country text fields.	
Matching Method	Defines the method for how the fields are compared. You can use the provided exact matching method for almost any field, including custom fields. A fuzzy matching method is available for commonly used standard fields. Each matching method is defined by normalization and match key definitions, matching algorithms, and other criteria.	
Match Blank Fields	Specifies how blank fields affect whether the two fields being compared are considered matches. If you select **Match Blank Fields** for a field and that field is blank in both records being compared, the fields are considered matches. However, if you select **Match Blank Fields** for a field and that field is blank in only one of the records being compared, the fields aren't considered matches. If you don't select **Match Blank Fields** for a field and that field is blank in both records being compared, the fields aren't considered matches.	
Match Key	A formula that improves the speed and performance of duplicate detection. When the matching rule runs, it compares the match key values of the saved record with existing records. If the saved record has the same match key value as an existing record, it's a potential duplicate and evaluated further. If the saved record has a unique match key value, it's not considered a duplicate.	✔
Matching Algorithm	Defines the logic that determines whether two fields match. For the exact matching method, the exact matching algorithm is automatically used. For the fuzzy matching method, various fuzzy matching algorithms can be	✔

Criterion	Definition	Automatically Defined for Custom Matching Rules
	used. Each matching algorithm is scored based on how closely it matches the two fields. For example, if you select exact matching and the two fields match, the match score is 100. If the two fields don't match, the score is 0.	
Scoring Method	Determines how the matching algorithms' match scores are calculated to come up with one match score for the field. Each matching algorithm is scored based on how closely it matches the two fields. Only standard matching rules use the scoring method.\n\nAverage: Uses the average match score.\n\nMaximum: Uses the highest match score.\n\nMinimum: Uses the lowest match score.\n\nWeighted Average: Uses the weight of each matching method to determine the average match score.	✔
Threshold	Determines the minimum match score needed for the field to be considered a match. The field is given a match score based on how closely it matches the same field in an existing record.	✔

See Also

  Matching Methods Used in Matching Rules
  Matching Algorithms Used with Matching Methods
  How Match Keys Are Generated and Used in Matching Rules

Matching Methods Used in Matching Rules

The matching method determines how a specific field in a record is compared to the same field in another record. Each matching method is defined by normalization criteria, match key definitions, and matching algorithms.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

The exact matching method looks for strings that exactly match a pattern. If you're using international

data, we recommend using the exact matching method with your matching rules. You can use the exact matching method for almost any field, including custom fields.

The fuzzy matching methods look for strings that approximately match a pattern. Some fuzzy matching methods, such as Acronym and Name Variant, identify similarities using hard-coded dictionaries. Because the dictionaries aren't comprehensive, results can include unexpected or missing matches. Specific fuzzy matching methods are available for commonly used standard fields on accounts, contacts, and leads.

Matching Method	Matching Algorithms	Scoring Method	Threshold	Special Handling
Exact	Exact			
Fuzzy: First Name	Exact Initials Jaro-Winkler Name Variant	Maximum	85	If the Middle Name field is used in your matching rule, it's compared using the Fuzzy: First Name matching method.
Fuzzy: Last Name	Exact Keyboard Distance Metaphone 3	Maximum	90	
Fuzzy: Company Name	Acronym Exact Syllable Alignment	Maximum	70	Removes words such as "Inc" and "Corp" before comparing fields. Also, company names are normalized. For example, "IBM" is normalized to "International Business Machines".
Fuzzy: Phone	Exact	Weighted Average	80	Phone numbers are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. This process works best with North American data.

Matching Method	Matching Algorithms	Scoring Method	Threshold	Special Handling
				• International code (exact, 10% of field's match score) • Area code (exact, 50% of field's match score) • Next 3 digits (exact, 30% of field's match score • Last 4 digits (exact, 10% of field's match score) For example, these phone numbers are being compared: 1-415-555-1234 and 1-415-555-5678. All sections match exactly except the last four digits, so the field has a match score of 90. This score is considered a match because it exceeds the threshold of 80.
Fuzzy: City	Edit Distance Exact	Maximum	85	
Fuzzy: Street	Exact	Weighted Average	80	Addresses are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. This process works best with North American data. • Street Name (Edit Distance, 50% of field's match score) • Street Number (exact, 20% of field's match score) • Street Suffix (exact, 15% of field's match score) • Suite Number (exact, 15% of field's match score)

Matching Method	Matching Algorithms	Scoring Method	Threshold	Special Handling
				For example, these billing streets are being compared: 123 Market Street, Suite 100, and 123 Market Drive, Suite 300.

Only the street number and street name match, so the field has a match score of 70. This score isn't considered a match because it falls below the threshold of 80. |
| Fuzzy: ZIP | Exact | Weighted Average | 80 | ZIP codes are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field.

• First five digits (Exact, 90% of field's match score)
• Next four digits (Exact, 10% of field's match score)

For example, these ZIP codes are being compared: 94104-1001 and 94104.

Only the first five digits match, so the field has a match score of 90. This score is considered a match because it exceeds the threshold of 80. |
| Fuzzy: Title | Acronym

Exact

Kullback-Liebler Distance | Maximum | 50 | |

See Also

Knowledge Article: Fuzzy Match on First Name Doesn't Detect the Expected Duplicate

Matching Algorithms Used with Matching Methods

The matching method and its corresponding matching algorithms are part of the matching rule's matching criteria. They help determine how a specific field in one record is compared to the same field in another record and whether the fields are considered matches.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

We provide an exact matching method and several fuzzy matching methods. When the exact matching method is selected, the exact matching algorithm is used to compare the fields. When a fuzzy matching method is selected, various fuzzy matching algorithms are used to compare the fields.

More than one matching algorithm can be used to compare a field. Each matching algorithm is scored based on how closely it matches the fields. The fields being compared aren't case sensitive.

Matching Algorithms Available with the Exact Matching Method

Matching Algorithm	Description
Exact	Determines whether two strings are the same. For example, salesforce.com and Salesforce aren't considered a match because they're not identical. The algorithm returns a match score of 0.

Matching Algorithms Available with Fuzzy Matching Methods

Matching Algorithm	Description
Acronym	Determines whether a business name matches its acronym. For example, Advanced Micro Devices and its abbreviation AMD are considered a match, returning a score of 100.
Edit Distance	Determines the similarity between two strings based on the number of deletions, insertions, and character replacements needed to transform one string into the other. For example, VP Sales matches VP of Sales with score of 73.
Initials	Determines the similarity of two sets of initials in personal names. For example, the first name Jonathan and its initial J match and return a score of 100.

Matching Algorithm	Description
	📝 **Note** When First Name is set to fuzzy matching and Last Name is set to exact matching, in the index, the initials include the last letter of a contact's first name. For example, Jane Smith is indexed as jesmith instead of jsmith. To match only the first initial of a first name, create a custom matching rule with both First Name and Last Name set to fuzzy matching.
Jaro-Winkler Distance	Determines the similarity between two strings based on the number of character replacements needed to transform one string into the other. This method is best for short strings, such as personal names. For example, Johnny matches Johny with a score of 97.
Keyboard Distance	Determines the similarity between two strings based on the number of deletions, insertions, and character replacements needed to transform one string into the other, weighted by the position of the keys on the keyboard.
Kullback Liebler Distance	Determines the similarity between two strings based on the percentage of words in common. For example, Director of Engineering matches Engineering Director with a score of 65.
Metaphone 3	Determines the similarity between two strings based on their sounds. This algorithm attempts to account for the irregularities among languages and works well for first and last names. For example, Joseph matches Josef with a score of 100.
Name Variant	Determines whether two names are a variation of each other. For example, Bob is a variation of Robert and returns a match score of 100. Bob is not a variation of Bill and returns a score of 0.
Syllable Alignment	Determines the similarity between two strings based on their sounds. First, the character strings are converted into syllables strings. Then the syllable strings are also compared and scored using the Edit Distance algorithm. This matching algorithm works well for company names. For example, Syllable Alignment gives Department of Energy and Department of Labor a relatively low score of 59. The syllable sequences of these two company names differ more than their character sequences (energy sounds very different from labor). Edit Distance gives the two strings a score of 74. Therefore, Syllable Alignment works better because the two strings aren't good match candidates.

How Match Keys Are Generated and Used in Matching Rules

When a matching rule runs, it applies one or more match key formulas before applying a comprehensive matching equation. Match keys help to increase the performance of duplicate rules through a preliminary comparison that narrows the matches to the 100 most likely duplicate records. Then the rule applies the matching equation only to those likely matches.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

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In rare instances, match keys result in undetected duplicates, but generally, match keys greatly improve the performance of duplicate rules.

How Match Keys Are Generated

- The matching equation that determines the arrangement of the fields is rewritten into a standardized format that translates the OR statements into AND statements.
- Values for fields in the matching rule are normalized.
- A match key is generated using the field combinations specified in the standardized field format. A matching rule can have multiple match keys. A custom matching rule can have up to 10 match keys; you're prevented from saving a matching rule that requires more.
- The match key is used to combine normalized field values for each record.

📝 **Note** No match key is generated for the Title field.

The match key notation shows which fields and which characters in those fields are used in a match key.
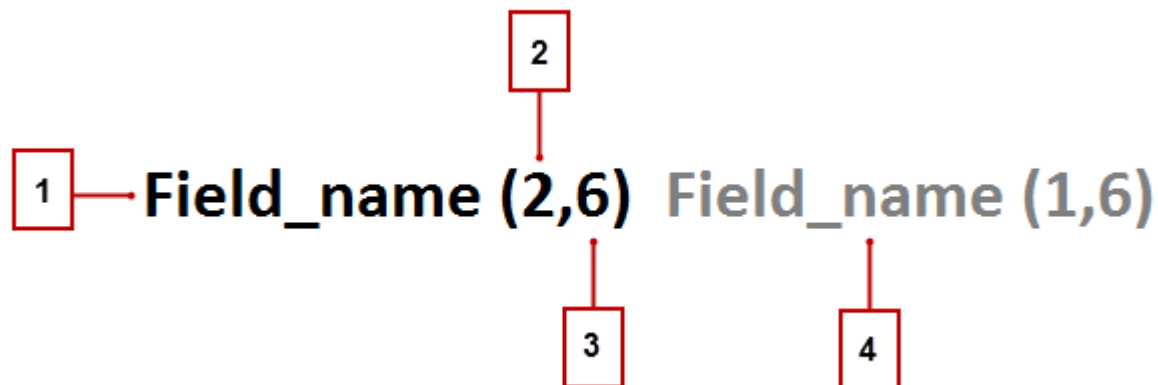
- The field used in the match key (1).
- Number of words (or tokens) in the field value to include in the match key (2). If no number is present, all words are included.

- Number of characters per word to include in the match key (3). If no number is present, all characters are included.
- Additional field used in the match key (4).

Match Keys for Standard and Custom Rules

Standard matching rules use predefined match keys. Custom rules that contain standard field combinations also use predefined match keys. For example, the matching rule equation for a custom contact matching rule is (First Name AND Last Name AND Company). A fuzzy matching method is selected for at least one field. The notation for its match key is: First_Name (1,1) Last_Name Company (2,6).

For nonstandard field combinations, custom rules use keys generated from their corresponding matching criteria.

Normalization Criteria for Match Keys

As part of the process of creating match key values, matching rule field values are normalized. How a field value is normalized depends on several factors, including the matching method for that field as specified in the matching rule. In addition, some commonly used fields are normalized to optimize duplicate detection.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic

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

📝 **Note** Fields, including custom fields and fields to which the exact matching method is applied, are normalized by lowercasing all letters and removing leading and trailing spaces.

Field	Normalization Details	Applies to Standard and Custom Matching Rules?	Examples
City	Lowercases all characters. Removes non-alphabetical and non-numeric characters, including white spaces. Retains up to the first six characters.	Yes. But on custom matching rules, the matching method must be **Fuzzy: City**.	San Francisco = sanfra Rome = rome
Company	Expands abbreviations. Lowercases all characters. Removes suffixes, such as Corporation, Incorporated, Inc, Limited, and Ltd. Removes the words and, the, of. Removes special characters and accents.	Yes. But on custom matching rules, the matching method must be **Fuzzy: Company**.	IBM = international business machines Intel Corp. = intel

Field	Normalization Details	Applies to Standard and Custom Matching Rules?	Examples
First Name	Replaces the first name with an alias, if applicable. Removes salutations, special characters, and accents. Keeps only the first letter of the first word, and lowercases this letter.	Yes. But on custom matching rules, the matching method must be **Fuzzy: First Name**.	Dr. Jane = j Mr. Bob= robert = r
Last Name	Removes special characters and suffixes. Replaces consecutive identical consonants with a single consonant. Lowercases the first letter. After normalization, the double metaphone algorithm is applied so that misspellings and spelling variants are accounted for.	Yes. But on custom matching rules, the matching method must be **Fuzzy: Last Name**.	O'Reilly, Jr. = oreily (without double metaphone) O'Reilly, Jr. = oreily = arl (with double metaphone)
Email	Removes special characters, such as underscores and periods, from both parts of the email address. Retains the @ character.	No. Applies only to standard matching rules.	john.doe@us.salesforce.com = johndoe@salesforcecom
Phone	Removes all non-alphabetical and non-numeric characters. For all U.S. phone numbers, converts alphabetical characters to numeric characters, and removes leading international code. Removes last four digits.	Yes. But on custom matching rules, the matching method must be **Fuzzy: Phone**.	1-800-555-1234 = 800555 44 20 0540 0202 = 44200540
Street Address	Removes all punctuation except hyphens. Removes common stop words, such as Avenue and Street. Takes the first five characters of the first two tokens.	Yes. But on custom matching rules, the matching method must be **Fuzzy: Street Address**.	123 Ocean View Avenue = 123ocean 567 Fifty-fourth St. = 567fifty
Website	Removes the protocol (http), subdomain (www), and file path. Then takes only the last two or three tokens, depending on whether there are international designations. Retains the periods.	No. Applies only to standard matching rules.	http://www.us.salesforce.com/product = salesforce.com http://www.ox.ac.uk/ = ox.ac.uk

Standard Matching Rules

You can use the provided standard matching rules with duplicate rules and duplicate jobs. You can't edit these standard matching rules, but you can create custom matching rules.

REQUIRED EDITIONS

Available in: Lightning Experience and Salesforce Classic
Available in: **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

Standard Account Matching Rule
The standard account matching rule identifies duplicate accounts using match keys, a matching equation, and matching criteria. It's activated by default.

Standard Person Account Matching Rule
The standard person account matching rule identifies duplicate person accounts using match keys, a matching equation, and matching criteria. To use the rule, first enable person accounts, and then activate rule in Setup.

Standard Contact Matching Rule and Standard Lead Matching Rule
The standard contact matching rule and standard lead matching rule identify duplicate contacts and leads using match keys, a matching equation, and matching criteria. They're activated by default.

Standard Matching Rule for Leads on Accounts
The standard matching rule for leads on accounts is activated with the purchase of Account Engagement Advanced or Premium edition. The rule populates the content of the Matched Leads component using a matching equation and matching criteria. By reducing redundant data, the rule and the component help you work toward complying with data protection and privacy regulations.

Standard Account Matching Rule

The standard account matching rule identifies duplicate accounts using match keys, a matching equation, and matching criteria. It's activated by default.

Match Keys

Match keys speed up matching by narrowing the potential matches to the most likely duplicates before the rule applies the comprehensive matching equation.

Match Key Notation	Match Key Value Examples
Company (2,6) City (_, 6)	Account: Orange Sporting Company = orangesporti City: San Francisco = sanfra Key: orangesportisanfra

Match Key Notation	Match Key Value Examples
Company (2,6) ZIP (1,3)	Account Name: salesforce.com = salesf ZIP: 94105-5188 = 941 Key: salesf941
Website City (_,6)	Website: https://www.salesforce.com = salesforce.com City: San Francisco = sanfra Key: salesforce.comsanfra
Website ZIP (1,3)	Website: https://www.salesforce.com = salesforce.com ZIP: 94105-5188 = 941 Key: salesforce.com941

Matching Equation

🛑 **Important** For accurate matches, the new or edited record must include a value in the Account Name field and either the City or the ZIP Code field.

(*Account Name* AND *Billing Street*)

OR (*Account Name* AND *City* AND *State*)

OR (*Account Name* AND *ZIP*)

OR (*Account Name* AND *Phone*)

OR (*Website* AND *Phone)*

OR (*Website* AND *Billing Street*)

Matching Criteria

Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
Account Name	Acronym Edit Distance Exact	Maximum	70	Don't match	Removes words such as "Inc" and "Corp" before comparing fields. Company names are normalized.
Phone	Exact	Weighted Average	80	Don't match on all sections except Area Code, which ignores blank fields	Phone numbers are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. This process works best with North American data. • International code (Exact, 10% of field's match score) • Area code (Exact, 50% of field's match score) • Next three digits (Exact, 30% of field's match score • Last four digits (Exact, 10% of field's match score) For example, these two phone numbers are being compared: 1-415-555-1234 and 1-415-555-5678. All sections match exactly, except the last four digits, so the field has a score of 90, which is considered a match because it exceeds the threshold of 80.
Billing Street	Edit Distance Exact	Weighted Average	80	Don't match	Addresses are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. This process works best with North American data.

Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
					• Street Number (exact, 20% of field's match score) • Street Name (Edit Distance, 50% of field's match score) • Street Suffix (exact, 15% of field's match score) • Suite Number (exact, 15% of field's match score) For example, these two billing streets are being compared: 123 Market Street, Suite 100, and 123 Market Drive, Suite 300. Because only the street number and street name match, the field has a match score of 70. The field isn't considered a match because the score is below the threshold of 80.
ZIP	Exact	Weighted Average	80	Don't match	ZIP codes are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. • First five digits (exact, 90% of field's match score) • Next four digits (exact, 10% of field's match score) For example, these two ZIP codes are being compared: 94104-1001 and 94104. Because only the first five digits match, the field has a match score of 90. The field is considered a match because the score exceeds the threshold of 80.
City	Edit Distance Exact	Maximum	85	Don't match	

Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
Website	Exact	Maximum	100	Don't match	The prefix "https://" is appended to the website domain. For example, the field value www.salesforce.com becomes https://www.salesforce.com for matching purposes. Matching for an account record that has a website without the "https://" prefix identifies the record as a duplicate.

See Also

Standard Account Duplicate Rule

Matching Criteria in Matching Rules

Standard Person Account Matching Rule

The standard person account matching rule identifies duplicate person accounts using match keys, a matching equation, and matching criteria. To use the rule, first enable person accounts, and then activate rule in Setup.

Match Keys

Match keys speed up matching by narrowing the potential matches to the most likely duplicates before the rule applies the comprehensive matching equation.

Match Key Notation	Examples
Email	Email: john_doe@us.ibm.com = johndoe@ibm.com Key: johndoe@ibm.com
First_Initial (1,1) Last_Name City (1,6)	First Initial: J = j Last Name: Doe = doe = t (with double metaphone applied) City: Philadelphia = philad Key: jtphilad
First_Initial (1,1) Last_Name ZIP (1,3)	First Initial: J = j

Match Key Notation	Examples
	Last Name: Doe = doe = t (with double metaphone applied) ZIP: 10001 = 100 Key: jt100
Street Address	123 Maple Avenue Key: 123maple
Phone (drop last four digits)	415-555-1234 Key: 415555 555-1234-5678 Key: 5551234

Matching Equation

The threshold for the first three conditions in the equation is 85; the threshold for the fourth condition is 75.

(*First Name* AND *Last Name* AND *Email*)

OR (*First Name* AND *Last Name* AND *Billing Street* AND (*City* OR *ZIP*))

OR (*First Name* AND *Last Name* AND *Phone*)

OR (*First Name* AND *Last Name* AND *Phone* AND (*City* OR *ZIP*) AND *Mailing Street* AND *Phone*)

Matching Criteria

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
First Name	First Name	Exact	Maximum	85 and 75	Don't match (ignores	If the record contains a value for both the First Name and Last Name

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
		Initials Jaro-Winkler Distance Metaphone 3 Name Variant			blank fields when Email is included in field grouping)	fields, the values are transposed to account for possible data entry mistakes. For example, suppose that the first name is George and the last name is Michael. The matching rule also evaluates the first name as Michael and the last name as George.
Last Name	Last Name	Exact Keyboard Distance Metaphone 3	Maximum	90 and 75	Don't match (ignores blank fields when Email is included in field grouping)	If the record contains a value for both the First Name and Last Name fields, the values are transposed to account for possible data entry mistakes. For example, suppose that the first name is George and the last name is Michael. The matching rule also evaluates the first name as Michael and the last name as George.
Account Name	Company	Acronym Edit Distance Exact	Maximum	70	Don't match	
Email	Email	Exact	Maximum	100	Don't match	
Phone	Phone	Exact	Weighted Average	80	Don't match on all sections except Area Code, which ignores	Phone numbers are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to determine a single score for the field.

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Thres hold	Blank Fields	Special Handling
					blank fields	This process works best with North American data. • International code (exact, 10% of field's match score) • Area code (exact, 50% of field's match score) • Next three digits (exact, 30% of field's match score • Last four digits (exact, 10% of field's match score) For example, these phone numbers are being compared: 1-415-555-1234 and 1-415-555-5678. All sections match exactly except the last four digits. The field has a match score of 90, which is considered a match because it exceeds the threshold of 80.
Billing Street	Street	Edit Distance Exact	Weighte d Average`	80	Don't match	Addresses are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to determine a single score for the field. This process works best with North American data. • Street Name (Edit Distance, 50% of field's match score) • Street Number (exact, 20% of field's match score) • Street Suffix (exact, 15% of field's match score) • Suite Number (exact, 15% of

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
						field's match score) For example, these addresses are being compared: 123 Market Street, Suite 100, and 123 Market Drive, Suite 300. Only the street number and street name match. The field has a match score of 70, which isn't considered a match because it's less than the threshold of 80.
Billing ZIP/ Postal Code	ZIP/ Postal Code	Exact	Weighted Average	80		ZIP codes are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to determine a single score for the field. • First five digits (exact, 90% of field's match score) • Next four digits (exact, 10% of field's match score)
Billing City	City	Edit Distance Exact	Maximum	85	Don't match	

Standard Contact Matching Rule and Standard Lead Matching Rule

The standard contact matching rule and standard lead matching rule identify duplicate contacts and leads using match keys, a matching equation, and matching criteria. They're activated by default.

Match Keys

Match keys speed up matching by narrowing the potential matches to the most likely duplicates before the rule applies the comprehensive matching equation.

Contact Match Key Notation	Contact Examples
Email	Email: john_doe@us.ibm.com = johndoe@ibm.com Key: johndoe@ibm.com
First_Name (1,1) Last_Name Email	First Name: John = j Last Name: Doe = doe = t (with double metaphone applied) Email: john_doe@us.salesforce.com = johndoe@salesforce.com Key: jt@salesforce.com
First_Name (1,1) Last_Name Company (2,5)	First Name: Marc = m Last Name: Benioff = pnf (with double metaphone applied) Company: salesforce.com = sales Key: mpnfsales
First_Name (1,1) Last_Name Phone (drop leading 1 and last four digits)	First Name: Marc = m Last Name: Benioff = pnf (with double metaphone applied) Phone: 1-415-555-1234 = 415555 Key: mpnf415555

Lead Match Key Notation	Lead Examples
Email	Email: john_doe@us.ibm.com = johndoe@ibm.com Key: johndoe@ibm.com

Lead Match Key Notation	Lead Examples
First_Name (1,1) Last_Name Email	First Name: John = j Last Name: Doe = doe = t (with double metaphone applied) Email: john_doe@us.salesforce.com = johndoe@salesforce.com Key: jt@salesforce.com
First_Name (1,1) Last_Name Company (2,5)	First Name: Marc = m Last Name: Benioff = pnf (with double metaphone applied) Company: salesforce.com = sales Key: mpnfsales
First_Name (1,1) Last_Name Phone (drop leading 1 and last four digits)	First Name: Marc = m Last Name: Benioff = pnf (with double metaphone applied) Phone: 1-415-555-1234 = 415555 Key: mpnf415555

Matching Equations

The standard contact matching rule uses the following matching equation.

(*First Name* AND *Last Name* AND *Title* AND *Account Name*)

OR (*First Name* AND *Last Name* AND *Email*)

OR (*First Name* AND *Last Name* AND *Phone* AND *Account Name*)

OR (*First Name* AND *Last Name* AND *Mailing Street* AND (*City* OR *ZIP* OR *Phone*))

OR (*First Name* AND *Last Name* AND *Mailing Street* AND *Title*)

OR (*First Name* AND *Last Name* AND *Title* AND *Email*)

OR (*First Name* AND *Last Name* AND *Phone*)

The standard lead matching rule uses the following matching equation.

(*First Name* AND *Last Name* AND *Title* AND *Company*)

OR (*First Name* AND *Last Name* AND *Email*)

OR (*First Name* AND *Last Name* AND *Phone* AND *Company*)

OR (*First Name* AND *Last Name* AND *Mailing Street* AND (*City* OR *ZIP* OR *Phone*))

OR (*First Name* AND *Last Name* AND *Mailing Street* AND *Title*)

OR (*First Name* AND *Last Name* AND *Title* AND *Email*)

OR (*First Name* AND *Last Name* AND *Phone*)

Matching Criteria

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
First Name	First Name	Exact Initials Jaro-Winkler Distance Metaphone 3 Name Variant	Maximum	85	Don't match (ignores blank fields when Email is included in field grouping)	If record contains a value for the First Name and Last Name fields, the values are transposed to account for possible data entry mistakes. For example, suppose that the first name is Felix and the last name is Michael. The matching rule also evaluates the first name as Michael and the last name as Felix.
Last Name	Last Name	Exact Keyboard Distance Metaphone 3	Maximum	90	Don't match (ignores blank fields when Email is included in field grouping)	If record contains a value for the First Name and Last Name fields, those values are transposed to account for possible data entry mistakes. For example, suppose that the first name is Felix and the last name is Michael. The matching rule also evaluates the first name as Michael

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Thres hold	Blank Fields	Special Handling
						and the last name as Felix.
Title	Title	Acronym Exact Kullback-Liebler Distance	Maximu m	50	Don't match	
Accoun t Name	Compa ny	Acronym Edit Distance Exact	Maximu m	70	Don't match	
Email	Email	Exact	Maximu m	100	Don't match	
Phone	Phone	Exact	Weighte d Average	80	Don't match on all sections except Area Code, which ignores blank fields	Phone numbers are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to determine a score for the field. This process works best with North American data. • International code (exact, 10% of field's match score) • Area code (exact, 50% of field's match score) • Next three digits (exact, 30% of field's match score • Last four digits (exact, 10% of field's match score) For example, these phone numbers are being compared:

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
						1-415-555-1234 and 1-415-555-5678. All sections match exactly except the last four digits. The field has a match score of 90, which is considered a match because it exceeds the threshold of 80.
Mailing Street	Street	Edit Distance Exact	Weighted Average`	80	Don't match	Addresses are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to determine a score for the field. This process works best with North American data. • Street Name (Edit Distance, 50% of field's match score) • Street Number (exact, 20% of field's match score) • Street Suffix (exact, 15% of field's match score) • Suite Number (exact, 15% of field's match score) For example, these addresses are being compared: 123 Market Street, Suite 100, and 123 Market Drive, Suite 300. The street number and street name match. The field has a match score of 70, which isn't considered a match because it's less than the threshold of 80.
Mailing ZIP/	ZIP/ Postal	Exact	Weighted	80	Don't match	ZIP codes are broken into sections

Fields on Contacts	Fields on Leads	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
Postal Code	Code		Average			and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to determine a score for the field. • First five digits (exact, 90% of field's match score) • Next four digits (exact, 10% of field's match score)
Mailing City	City	Edit Distance Exact	Maximum	85	Don't match	

See Also

   Standard Contact Duplicate Rule
   Standard Lead Duplicate Rule
   Matching Criteria in Matching Rules
   How Match Keys Are Generated and Used in Matching Rules

Standard Matching Rule for Leads on Accounts

The standard matching rule for leads on accounts is activated with the purchase of Account Engagement Advanced or Premium edition. The rule populates the content of the Matched Leads component using a matching equation and matching criteria. By reducing redundant data, the rule and the component help you work toward complying with data protection and privacy regulations.

Note The standard matching rule for leads on accounts works best on accounts with values in the Website field or the Account Name, Phone, Address, and City fields.

Matching Equation

(*Company* AND *Street*)

OR (*Company* AND *City* AND *State*)

OR (*Company* AND *ZIP/Postal Code*)

OR (*Company* AND *Phone*)

OR (*Website*)

Matching Criteria

Account Field	Lead Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
Account Name	Company	Acronym Edit Distance Exact	Maximum	70	Don't match	Removes words such as `Inc` and `Corp` before comparing fields. Also, company names are normalized. For example, `1st National Bank` is normalized to `First National Bank`.
Phone	Phone	Exact	Weighted Average	80	Don't match on all sections except Area Code, which ignores blank fields	Phone numbers are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. This process works best with North American data. • International code (Exact, 10% of field's match score) • Area code (Exact, 50% of field's match score) • Next 3 digits (Exact, 30% of field's match score • Last 4 digits (Exact, 10% of field's match score) For example, suppose that these two phone numbers are being compared: `1-415-555-1234` and `1-415-555-5678`. All sections match exactly *except* the last 4 digits, so the field has a match score of 90. The field is considered a match

Account Field	Lead Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
						because the score exceeds the threshold of 80.
Billing Street	Street	Edit Distance Exact	Weighted Average	80	Don't match	Addresses are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. This process works best with North American data. • Street Number (Exact, 20% of field's match score) • Street Name (Edit Distance, 50% of field's match score) • Street Suffix (Exact, 15% of field's match score) • Suite Number (Exact, 15% of field's match score) For example, suppose that these two billing streets are being compared: `123 Market Street, Suite 100,` and `123 Market Drive, Suite 300.` Because only the street number and street name match, the field has a match score of 70. The field isn't considered a match because the score is below the threshold of 80.
Billing ZIP/ Postal Code	ZIP/Postal Code	Exact	Weighted Average	80	Don't match	ZIP codes are broken into sections and compared by those sections. Each section has its own matching method and match score. The section scores are weighted to come up with one score for the field. • First 5 digits (Exact, 90% of field's

Account Field	Lead Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
						match score) • Next 4 digits (Exact, 10% of field's match score) For example, suppose that these two ZIP codes are being compared: 94104-1001 and 94104. Because only the first five digits match, the field has a match score of 90. The field is considered a match because the score exceeds the threshold of 80.
Billing City	City	Edit Distance Exact	Maximum	85	Don't match	
Website	Email	Exact	Maximum	100	Don't match	The domain in the email suffix in the lead record is extracted and compared to the website field in the account record. Email addresses ending in widely used domains such as gmail.com and yahoo.com are ignored.

If the account Website field has no value, and at least one contact is related to the account, the following matching criteria are also applied.

Related Contact Field	Lead Field	Matching Algorithms	Scoring Method	Threshold	Blank Fields	Special Handling
Email	Email	Exact	Maximum	100	Don't match	The domain in the lead's email suffix is extracted and compared to email suffixes in the contact records with the 20 most recent system timestamps. Among those 20 records, the rule then identifies the 5

Relate d Conta ct Field	Lead Field	Matchin g Algorith ms	Scoring Method	Thres hold	Blank Fields	Special Handling
						most frequently occurring email suffixes. Finally, the rule identifies as possible matches any leads that share those suffixes. Email addresses ending in widely used domains such as gmail.com and yahoo.com are ignored.

Considerations for Using Duplicate Management in the Salesforce Mobile App

Review considerations for using duplicate management features on a mobile device.

- The Salesforce mobile app doesn't alert users to existing duplicate accounts, contacts, or leads.
- The Salesforce mobile app does alert users when they're about to create an account, contact, or lead that appears to duplicate an existing record.
- Each possible duplicate is shown on a "duplicate card." The app displays a maximum of 30 duplicates (10 per object), even if there are more.
- A duplicate card displays three fields, which are derived from the search results format defined for your org, not from the associated matching rule.
- If users tap a duplicate card that appears while they're editing or creating a record, any information they entered before tapping the card is lost.
- By default, duplicate rules run when users complete fields on a record, rather than when they save a record.
- The Salesforce mobile app doesn't support merging of records.

Integrate Third-Party Data with Your Records

Give your sales team data and connections that they can use to cultivate great relationships with customers and target productive prospects. Lightning Data connects you with firmographic, industry, and region-specific data from third-party providers. You license Lightning Data packages directly from providers, and you use a convenient unified interface to integrate data from all third-party sources into

Salesforce.

REQUIRED EDITIONS

> Available in: **Professional**, **Enterprise**, **Performance**, and **Unlimited** Editions; Geocode rules also available in **Developer** Edition.

USER PERMISSIONS NEEDED	
To update records:	Edit on accounts, contacts, leads, and Read on the custom and external objects included in a data package
To activate or deactivate data integration rules:	Customize Application
To install a package:	Download AppExchange Packages
To activate and configure data integration rules for third-party data services:	View Setup and Configuration AND Customize Application
To run or access a data assessment:	Customize Application AND View All Data

Use Third-Party Data to Update and Add Records to Salesforce
A rule set up by your Salesforce admin compares your accounts, contacts, and leads to data from Lightning Data. Depending on how your admin sets up the rule, your records are updated as information changes. Or your admin can give you purchase credits to import Lightning Data records to add to Salesforce as accounts.

Set Up and Monitor Data Integration
Set up Lightning Data data services to update your existing records or import new ones. Monitor match rates and updates.

Considerations for Using Data Integration in the Salesforce Mobile App
Review considerations for using Data Integration features on a mobile device.

See Also
  AppExchange: Lightning Data

Use Third-Party Data to Update and Add Records to Salesforce

A rule set up by your Salesforce admin compares your accounts, contacts, and leads to data from

Lightning Data. Depending on how your admin sets up the rule, your records are updated as information changes. Or your admin can give you purchase credits to import Lightning Data records to add to Salesforce as accounts.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED	
To update records:	Edit on accounts, contacts, leads, and Read on the custom and external objects included in a data package

Check for New Data Matched to a Record
Look at the data status to see whether a data service has new data matched to an account, contact, or lead.

Refine Your Search for Companies to Import
Narrow your Discover Companies search results to the most ideal prospects.

Check for New Data Matched to a Record

Look at the data status to see whether a data service has new data matched to an account, contact, or lead.

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

Data Statuses
When you check for new data on a record, the data status indicates how the record compares with data service records.

See Also
Data Statuses

Data Statuses

When you check for new data on a record, the data status indicates how the record compares with data service records.

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

Data Status	Definition
⚠ Not Compared	The Salesforce record wasn't compared with records in the data service.

Data Status	Definition
✅ In Sync	The Salesforce record matches a record in the data service, and the fields to be updated have identical values.
✅ Reviewed	The Salesforce record matches a record in the data service, but not all values from the matched record were accepted. Only values for fields to be updated are used to determine the status. A record retains Reviewed status until someone updates the record manually or the data service record becomes unavailable.
⚠️ Different	The Salesforce record matches a record in the data service, but the fields to be updated have different values, and the differences haven't been reviewed.
⚠️ Match Available	The data service doesn't have a record that qualifies for automatic matching, but it does have one or more possible matches.
❌ No Match	The data service has no records similar to the Salesforce record.
❌ Skipped	The Salesforce and data service records were compared, but an error (for example a validation or trigger error) prevented the data status from being updated.

See Also

   [Check for New Data Matched to a Record](#)

Refine Your Search for Companies to Import

Narrow your Discover Companies search results to the most ideal prospects.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED

To search for companies:	Read on all fields on the external object included in the Lightning Data package

- Use free-text search.
  You can group search terms by using quotation marks, use an asterisk (*) to find items that match zero or more characters in the middle or at the end of your query, and use a question mark (?) to find items that match a single character in the middle or at the end of your query.
- To search for specific values on a field, use advanced search.

Separate multiple values with commas. You can't use an asterisk (*) or a question mark (?) to represent characters. Advanced search applies an AND operation between fields, and an OR operation between multiple values for a single field.

- Filter your results for values specific to the data source you select.
  In filters representing a range, you can leave the min field bland to perform a "less than" search, or leave the max field blank to perform a "greater than" search. Use k as a US English abbreviation for thousand, m for million, and b for billion. For example, $150m$ = 150,000,000.

See Also
  AppExchange: Lightning Data

Set Up and Monitor Data Integration

Set up Lightning Data data services to update your existing records or import new ones. Monitor match rates and updates.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED

To activate or deactivate data integration rules:	Customize Application
To install a package:	Download AppExchange Packages
To activate and configure data integration rules for third-party data services:	View Setup and Configuration

	AND
	Customize Application
To run or access a data assessment:	Customize Application
	AND
	View All Data

Activate and Configure Data Integration Rules

Activate data integration rules, map fields in your records to fields from a data service, and configure page layouts so that your sales team can view third-party data and update records.

Use Third-Party Data Services

Use Lightning Data packages and Geocode and Company Info rules to update and add to your records.

Check the Match Rates for a Data Service

Monitor the percentage of your records that data integration rules have matched to a record in data services. When records are matched, the data service can update them.

Create Reports on Data Integration Updates

Use reports on data integration status to monitor your accounts, contacts, and leads for records that need attention and to ensure the highest possible match rates.

Activate and Configure Data Integration Rules

Activate data integration rules, map fields in your records to fields from a data service, and configure page layouts so that your sales team can view third-party data and update records.

REQUIRED EDITIONS

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

To activate or deactivate data integration rules:	Customize Application

Activate the Data Integration Rule for a Data Service

Automatically match records to current information in a data service by activating a Lightning Data package rule, a geocode rule, or a company info rule. When a user edits a record by changing the value of a field used in matching, the rule updates the record. When a record is created, the rule looks for matches in the data service. Plus, you can fine-tune Lightning Data rules: Add a custom field you can use to identify records to update or to include in data assessments, while skipping other records.

Edit the Field Mapping for a Data Integration Rule

To help ensure that your records and reports are accurate, check the field mapping when you activate a data integration rule. Some Lightning Data rules let you keep or overwrite field values when new data is available.

Things to Know About Configuring and Activating Data Integration Rules

Review considerations for configuring and activating data integration rules, including rules in Lightning Data packages and rules for adding geocodes and company information from Dun & Bradstreet.

Integration Rule Info Fields

Integration Rule Info fields are available in reports.

Activate the Data Integration Rule for a Data Service

Automatically match records to current information in a data service by activating a Lightning Data package rule, a geocode rule, or a company info rule. When a user edits a record by changing the value of a field used in matching, the rule updates the record. When a record is created, the rule looks for matches in the data service. Plus, you can fine-tune Lightning Data rules: Add a custom field you can use to identify records to update or to include in data assessments, while skipping other records.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED

To activate or deactivate data integration rules:	Customize Application

Each data service includes an external object used for updating and importing records and a data integration rule that identifies matches with your Salesforce records. Some data services also include a custom object that contains more data.

Regardless of whether a rule is activated, users can view rule status and manually update a record at any time.

1. In Salesforce Classic, new data isn't displayed on records by default. If your users use Salesforce Classic, add the Data Integration Rules related list to the page layouts for accounts, contacts, and leads.
2. Assign object permissions to users.
   The object permissions required depend on the rule. For details, contact the data service provider.
3. In Setup, use the Quick Find box to find **Data Integration Rules**.
4. Select the rule settings you want.

   Update all records

   > When you deselect this option, the rule runs only on records that are added or edited.

   > Before selecting **Update all records**, first test the rule. With the option deselected, save the rule settings and update a few records manually. If the updates are made, select the option

and save the settings again. When you select this option, the rule runs under the following conditions.

- When you first activate the rule, it runs on all records. If you have more than 10 million records on an object–account, contact, or lead–the rule doesn't run.
- After the rule is activated, it runs on records that are added or edited. It also runs on all records periodically, at the frequency determined by the data service provider, unless it's a geocode rule.

> **Note** When the **Update all records** option is selected, a rule doesn't necessarily run immediately after you edit the rule's field mapping or match score. To run the rule immediately, deactivate the rule, change the settings, and reactivate the rule.

When the following options are selected, they're applied whether the rule updates the records or users update the records manually.

Bypass triggers

Triggers on the object are bypassed. However, triggers on the related custom object aren't bypassed.

Bypass workflows

Workflow rules and workflows created via Process Builder are bypassed. However, workflow rules and workflows on the related custom object aren't bypassed.

Leave last-modified information unchanged

The values of the LastModifiedById and LastModifiedDate fields on records aren't updated. The SystemModstamp field is always updated, regardless of this setting.

However, if there's a custom triggered automation modifying a record at the same time as an integration rule, the LastModifiedById is updated to "Data.com User".

5. Save the rule settings.
6. Review the field mapping for the rule to ensure that the data service fields are correctly mapped to your Salesforce object's fields.
7. To specify which records you want a Lightning Data rule to run on, create a custom field.
   a. Create a checkbox field, and name it according to the pattern `LD_USE_Data Source Name`. To find the data source name, in Setup, enter `External Data Sources`, and look for the name under the External Data Source column. Use the exact data source name, including uppercase and lowercase letters.
   b. Label the field using one of these patterns: `Match Using Data Service Provider Name` or `Enrich Using Data Service Provider Name`. The data *service* provider name is different from the data *source* name.
   c. Add the field to the layout for the object targeted by the rule.
   The rule runs on records with the checkbox selected, and skips the rest. To select or deselect the checkbox on many records at one time, use Data Loader.
8. Activate the rule.

Edit the Field Mapping for a Data Integration Rule

To help ensure that your records and reports are accurate, check the field mapping when you activate a data integration rule. Some Lightning Data rules let you keep or overwrite field values when new data is available.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED	
To edit field mapping:	Customize Application

The data service provider determines a rule's default field mapping.

1. In Setup, use the Quick Find box to find **Data Integration Rules**. Select the rule you want to look at, and then click **Edit Field Mapping**.
2. On the Match tab, look at the fields used to match your records to fields in the data service. If a data service field isn't correctly mapped to the standard object, select a different standard object field. For example, suppose that the data service field City is mapped to the account field Billing City, but you use Shipping City in account addresses. Change Billing City to Shipping City.

3. If the rule can update fields, the settings include an Update tab. Click **Update** and look at the fields that can be updated with new data when the rule runs. Check that each data service field is correctly mapped to a Salesforce standard object field. If needed, select different standard object fields and add or remove fields to update.

    You can add, remove, or change up to 12 mappings at a time before saving.

Rules that support data updates determine a record's data status using the standard object field values in the update mapping. The data service fields used to match records and the fields used to update them can differ.

4. If you use a Lightning Data rule that updates fields via custom object lookups, you can update a field automatically when new data is available. First enable history tracking for the field, and then select **Overwrite**.

You can't overwrite data from company info or geo rules.

See Also

[Track Field History for Standard Objects](#)

Things to Know About Configuring and Activating Data Integration Rules

Review considerations for configuring and activating data integration rules, including rules in Lightning Data packages and rules for adding geocodes and company information from Dun & Bradstreet.

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

Things to Know About Data Integration Rules
Review considerations for using data integration rules.

Things to Know About Geocode Data Integration Rules
Review considerations for using geocode data integration rules.

Things to Know About Company Info Data Integration Rules
Review considerations for using company info data integration rules.

Things to Know About Data Integration Rules

Review considerations for using data integration rules.

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

Frequency of Updates

>
> When the **Update all records** option is selected, the update frequency depends on the rule.
>
> - For Lightning Data packages, each data service provider determines how often the rule runs.
> - Geocode rules run only at the time they're activated and, from that point on, on records that are added or edited.
> - Company info rules run approximately every 14 days. They also run when they're activated and when records are added or edited.

Field Mapping Changes Made While a Rule Is Activated

>
> If you select the **Update all records** option and then you change your field mapping settings, update all your records by deactivating and then reactivating the rule.

Sandbox Testing Recommended

>
> We recommend that you test data integration rules in a sandbox before running them in production.

Update Status in Sandboxes

>
> You can't copy status information associated with data integration rules to or from a sandbox. To get status information in your sandbox, activate your data integration rules and process your records in your sandbox.

Field Customizations

>
> Rule-based updates are independent of field customizations (such as approvals, workflow rules, or Apex triggers) that you use for accounts, contacts, or leads. Review and edit your customizations to ensure that they work after values are updated.

Currency Conversion

>
> Data integration rules for Lightning Data and company info give currency amounts in US dollars. When the multiple currencies feature is enabled, Lightning Data rules convert numerical fields mapped to a currency type field from US dollars to the record currency. Make sure that US dollars and the currency of the records that you want to update are both active. The rules use the conversion rate defined for your org.

Multicurrency Enabled?	Other Conditions	Result
Yes	Data service currency field is mapped to a currency field in Salesforce. US dollars is one of the active currencies.	The rule populates the record's currency field with converted data service value, using conversion rate defined for org. Values are shown in the following format: Record Currency (User Currency). After conversion, the data service currency value is no longer

Multicurrency Enabled?	Other Conditions	Result
		displayed. If an error prevents the conversion, the rule leaves the record's currency field blank.
Yes	US dollars or record currency is inactive.	The rule leaves the record's currency field blank. When users compare records side by side, the currency field isn't displayed.
Yes	Data service currency field is mapped to a non-currency field in Salesforce.	The record is populated with the value from the data service, without converting.
No	Data service currency field is mapped to a currency field in Salesforce. Org currency is US dollars.	The record is populated with the value from the data service, without converting.
No	Data service currency field is mapped to a currency field in Salesforce. Org currency isn't US dollars.	The rule leaves the record's currency field blank. When users compare records side by side, the currency field isn't displayed.

   Enable Multiple Currencies

Things to Know About Geocode Data Integration Rules

Review considerations for using geocode data integration rules.

REQUIRED EDITIONS

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

Actions When Geocode Information Is Added to Records

When geocode fields are updated, values in the fields are overwritten.

Visibility of Geocode Information

Geocode information isn't visible on records. However, you can view it using the Salesforce API. You can also create custom fields that use formulas to show geocode fields on records.

📝 **Note** If you map geocode information (latitude, longitude, and accuracy rating) to custom fields, the custom fields must be text fields. Geocode fields can't be mapped to other custom field types, including number fields.

Things to Know About Company Info Data Integration Rules

Review considerations for using company info data integration rules.

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

Location Matching for Accounts

Company Info for Accounts matches an account record based on the account's location. All Dun & Bradstreet countries are supported.

Location Matching for Leads

If a lead contains a value for the Country field, the Company Info for Leads rule adds company information for the domestic headquarters in that country. If the lead doesn't contain a value for Country, the rule adds global headquarters information.

Separate Field Mapping Settings for Rules

The field mapping selections don't affect field mapping for company info rules. Each rule has its own customizable field mapping settings.

Integration Rule Info Fields

Integration Rule Info fields are available in reports.

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

Field	Description
Data Integration Status	Indicates the data integration status of a Salesforce record matched to a data service record

Field	Description
	by a data integration rule.
Data Integration Rule ID	Contains the ID of the data integration rule.
Description	Displays the data integration rule description.
Message	Contains error messages, such as validation errors, generated when a record isn't saved after the rule runs.

See Also

   Create Reports on Data Integration Updates

Use Third-Party Data Services

Use Lightning Data packages and Geocode and Company Info rules to update and add to your records.

REQUIRED EDITIONS

Available in: **Professional**, **Enterprise**, **Performance**, and **Unlimited** Editions; Geocode rules also available in **Developer** Edition.

USER PERMISSIONS NEEDED	
To install a package:	Download AppExchange Packages
To activate and configure data integration rules for third-party data services:	View Setup and Configuration AND Customize Application
To run or access a data assessment:	Customize Application AND View All Data

Get Geocodes for Addresses in Your Records
Geocodes help your sales and marketing teams find nearby prospects and assign territories and campaigns. After you activate a geocode rule, verify that geocodes were added to your accounts, contacts, and leads. Give your users access to related objects and fields so that they can review records.

See Also

AppExchange: Lightning Data

Geocode Data Integration Rules

Check the Match Rates for a Data Service

Get Geocodes for Addresses in Your Records

Geocodes help your sales and marketing teams find nearby prospects and assign territories and campaigns. After you activate a geocode rule, verify that geocodes were added to your accounts, contacts, and leads. Give your users access to related objects and fields so that they can review records.

REQUIRED EDITIONS

Available in: **Professional**, **Enterprise**, **Performance**, and **Unlimited** Editions; Geocode rules also available in **Developer** Edition

USER PERMISSIONS NEEDED	
To set up and activate data integration rules:	Customize Application
To edit page layouts:	Customize Application

Verify That Geocodes Were Added to Records

Because geocode fields aren't typically visible on a record, after you activate a geocode rule, we recommend verifying that geocodes were added to your records.

Grant Permissions for Geocode Rules

When you activate a geocode rule, give your users access to related objects and fields so that they can review new data.

Geocode Data Integration Rules

Geocode rules update your accounts, contacts, and leads with geocodes.

Geocode Fields and Accuracy

Geocode information identifies a location using a latitude, a longitude, and an accuracy rating. Geocode fields are available for standard addresses on accounts, contacts, and leads in Salesforce. Geocode fields aren't visible on records, but you can view them using the Salesforce API.

See Also

Activate the Data Integration Rule for a Data Service

Verify That Geocodes Were Added to Records

Because geocode fields aren't typically visible on a record, after you activate a geocode rule, we recommend verifying that geocodes were added to your records.

Use Lightning Experience and the API to Verify That Geocodes Were Added

After you activate a geocode rule, use Lightning Experience and the API to verify that geocodes were added to records.

Use Salesforce Classic and the API to Verify That Geocodes Were Added

After you activate a geocode rule, use Salesforce Classic and the API to verify that geocodes were
added to records.

See Also

Geocode Data Integration Rules

Build a Formula Field

Use Lightning Experience and the API to Verify That Geocodes Were Added

After you activate a geocode rule, use Lightning Experience and the API to verify that geocodes were
added to records.

REQUIRED EDITIONS

Available in: **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions
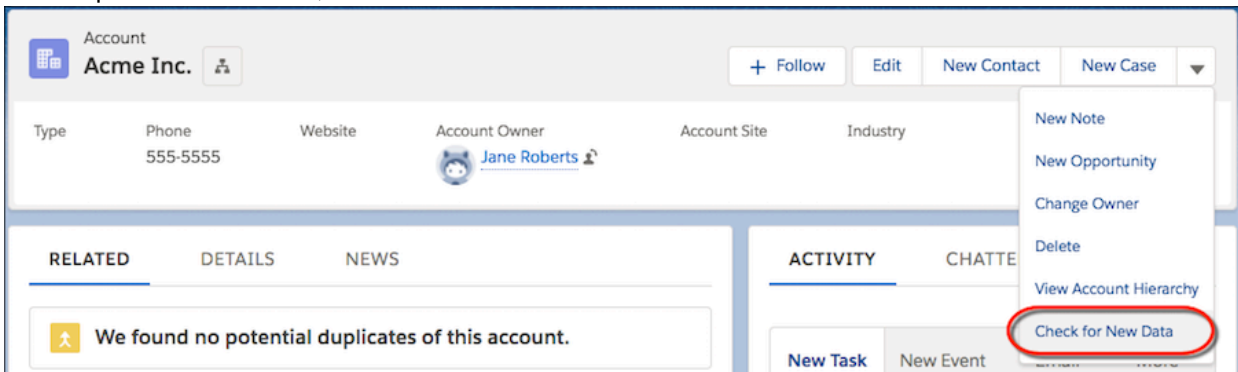
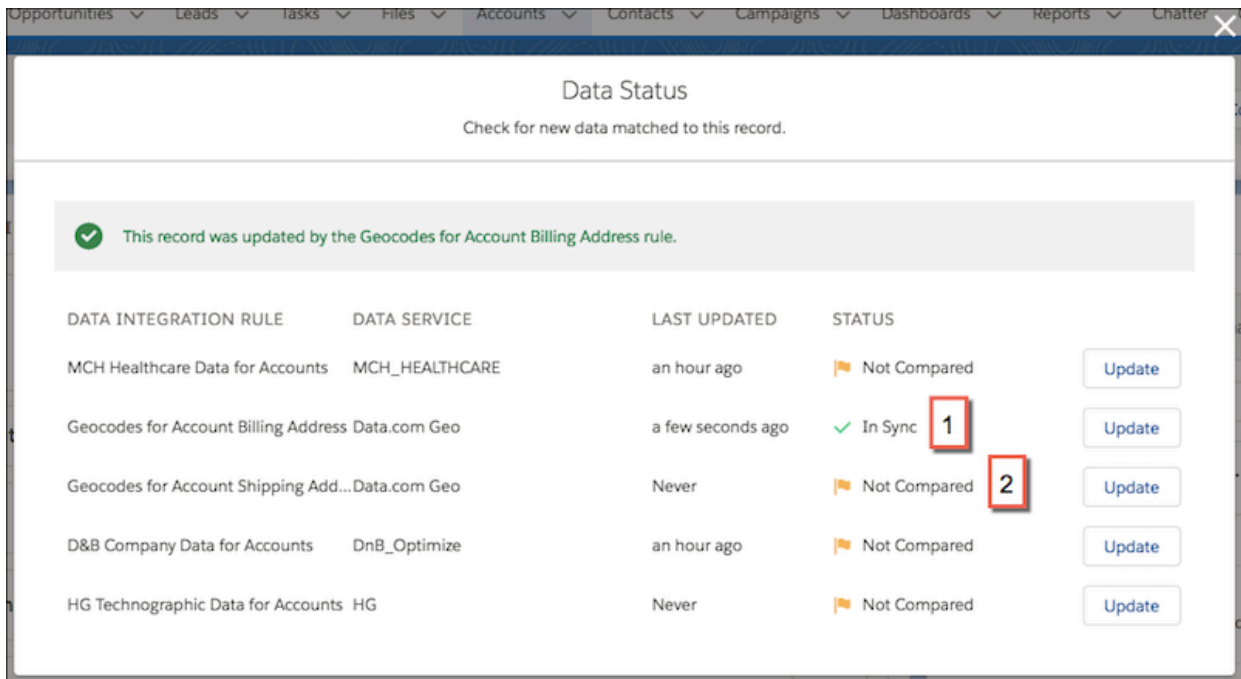USER PERMISSIONS NEEDED

To use the Salesforce API: API Enabled

In Setup, activate one of the geocode rules.

1. Review the geocode rule update status for a record.
   a. Open an account or lead record, depending on the geocode rule you activated.
   b. In the quick action menu, select **Check for New Data**.

> If the rule's status is In Sync, the record has up-to-date geocodes from the data service (1). If you see another status (2), add geocodes to the record by clicking **Update**.

2. Using the Salesforce API, make sure that the geocode fields have values.

   a. Get the value of the Id field for a record.

   b. Using the ID, query the address fields and geocode fields. Or query all records or the first *X* number of records for an object.

   Example: SOQL Query for Contacts

```
SELECT Name, Email, MailingAddress, MailingCity, MailingState, MailingCoun
try, MailingLatitude, MailingLongitude, MailingGeocodeAccuracy
               FROM Contact
               WHERE Id IN ('003D000000QRoqW', '003R0000001ySoG', '003D00
0000QRoqU');
```

   c. Verify that the geocode fields have values.

Use Salesforce Classic and the API to Verify That Geocodes Were Added

After you activate a geocode rule, use Salesforce Classic and the API to verify that geocodes were added to records.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED	
To use the Salesforce API:	API Enabled

In Setup, activate one of the geocode rules.

1. Review the geocode rule update status for a record.
   a. Open an account or lead record, depending on the geocode rule you activated.
   b. In the Data Integration Rules section, review the geocode rule update status.

   If the geocode rule's update status is In Sync, the record has up-to-date information from the data service. If you see another status, you can manually update the record by clicking **Update**.
2. Using the Salesforce API, make sure that the geocode fields have values.
   a. Get the value of the Id field for a record.
   b. Using the ID, query the address fields and geocode fields. Alternatively, you can query all records or the first *X* number of records for an object.
   Example: SOQL Query for Contacts

   ```
   SELECT Name, Email, MailingAddress, MailingCity, MailingState, MailingCoun
   try, MailingLatitude, MailingLongitude, MailingGeocodeAccuracy
               FROM Contact
               WHERE Id IN ('003D0000000QRoqW', '003R0000001ySoG', '003D00
   0000QRoqU');
   ```

   c. Verify that the geocode information fields have values.

See Also

   Add Geocode Information to Record Page Layouts

Grant Permissions for Geocode Rules

When you activate a geocode rule, give your users access to related objects and fields so that they can

review new data.

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

USER PERMISSIONS NEEDED	
To grant user permissions:	Customize Application

💡 **Tip** You can add geocode fields to a page layout using custom formula fields.

- Give users Read and Edit access to the account, contact, or lead object.
- On accounts, contacts, or leads, set field-level security to Visible and give users Read and Edit access to the Address field.

See Also
Activate the Data Integration Rule for a Data Service
Verify That Geocodes Were Added to Records

Geocode Data Integration Rules

Geocode rules update your accounts, contacts, and leads with geocodes.

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

Default Name	Object	How Fields Are Updated	Fields Used to Match Records	Fields Updated
Geocodes for Account Billing Address	Account	Overwrite	Billing Address	- BillingLatitude - BillingLongitude - BillingGeocodeAccuracy Latitude, longitude, and accuracy aren't visible on records.
Geocodes for Account Shipping Address	Account	Overwrite	Shipping Address	- ShippingLatitude - ShippingLongitude - ShippingGeocodeAccuracy Latitude, longitude, and

Default Name	Object	How Fields Are Updated	Fields Used to Match Records	Fields Updated
				accuracy aren't visible on records.
Geocodes for Contact Mailing Address	Contact	Overwrite	Mailing Address	• MailingLatitude • MailingLongitude • MailingGeocodeAccuracy Latitude, longitude, and accuracy aren't visible on records.
Geocodes for Lead Address	Lead	Overwrite	Address	• Latitude • Longitude • GeocodeAccuracy Latitude, longitude, and accuracy aren't visible on records.

See Also

Geocode Fields and Accuracy

Geocode Fields and Accuracy

Geocode information identifies a location using a latitude, a longitude, and an accuracy rating. Geocode fields are available for standard addresses on accounts, contacts, and leads in Salesforce. Geocode fields aren't visible on records, but you can view them using the Salesforce API.

REQUIRED EDITIONS

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

Geocode Fields

Object	Standard Address	Geocode Fields
Account	Billing Address	• BillingLatitude

Object	Standard Address	Geocode Fields
		• BillingLongitude • BillingGeocodeAccuracy
Account	Shipping Address	• ShippingLatitude • ShippingLongitude • ShippingGeocodeAccuracy
Contact	Mailing Address	• MailingLatitude • MailingLongitude • MailingGeocodeAccuracy
Lead	Address	• Latitude • Longitude • GeocodeAccuracy

Accuracy Values

Accuracy tells you more about the location of a latitude and longitude. For example, `Zip/Postal Code` means that the latitude and longitude indicate the point at the center of the ZIP or postal code area for an address. In this case, a match for the exact street address couldn't be found.

Accuracy Value	Description
`Address`	In the same building
`NearAddress`	Near the address
`Block`	Midway point of the block
`Street`	Midway point of the street
`ExtendedZip`	Center of the extended ZIP or postal code area
`Zip/Postal Code`	Center of the ZIP or postal code area
`Neighborhood`	Center of the neighborhood
`City`	Center of the city
`County`	Center of the county

Accuracy Value	Description
`State/Province`	Center of the state or province
`Unknown`	No match for the address was found

Check the Match Rates for a Data Service

Monitor the percentage of your records that data integration rules have matched to a record in data services. When records are matched, the data service can update them.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED

To check match rates:	Customize Application

1. In Setup, use the Quick Find box to find **Data Integration Metrics**.

2. On the Match Rates tab (1), select a data service from the dropdown menu (2).

   Match rates are displayed 24 hours after you activate a rule. After that, match rates are aggregated and updated nightly.

   The Errors column shows the number of errors that occurred when the rule ran. An error occurs if a trigger, workflow rule, duplicate rule, or validation rule prevents a record from being updated. To download a file that includes the ID of each record with an error and the associated error message, click the number of errors. Only the most recent error for a record is available. The Errors column includes a maximum of 10,000 errors per data integration rule.

Create Reports on Data Integration Updates

Use reports on data integration status to monitor your accounts, contacts, and leads for records that need attention and to ensure the highest possible match rates.

REQUIRED EDITIONS

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

USER PERMISSIONS NEEDED	
To create or update custom report types:	Manage Custom Report Types
To delete custom report types:	Modify All Data
To create, edit, and delete reports:	Create and Customize Reports AND Report Builder
To run reports:	Run Reports
To schedule reports:	Schedule Reports

1. In Setup, use the Quick Find box to find **Report Types**.
2. Create a report type, and select **Accounts**, **Contacts**, or **Leads** as the primary object.

   If you're working toward complying with data protection and privacy regulations, consider excluding personal data from the report type name and description.

3. Click **Next**.
4. Relate Integration Rule Info to the primary object that you selected.
   - To report only on records processed by a rule, select **Each "A" record must have at least one related "B" record**.
   - To report on all records, select **"A" records may or may not have related "B" records**. If you choose this option, when you create reports, you can filter out records that a rule hasn't processed. Person accounts and other records that a rule hasn't processed have a data integration status of Blank.
5. Save the report type.
6. Create a report using the custom record type you created.
7. Add the Integration Rule Info fields to the report. Zero in on the information you want to see by adding filters to the report.

   👁 **Example** To help ensure the highest possible match rates, group records by data integration status, such as Not Found, Different, and Skipped. Then inspect individual records in the report. To focus on records processed by a specific rule, filter for Description fields containing the rule's name.

Not Found

The rule processed records with a status of Not Found, but the records weren't matched to records in a data service. Inspect these records to ensure that the data in the fields the rule uses for matching are in good shape. Missing or incorrect data can prevent matching.

Different

Inspect records with a status of Different to confirm each record's field values or overwrite selected fields with values from the data service.

Skipped

Inspect records with a status of Skipped to see what validation or trigger error prevented the Salesforce record from being matched or updated.

See Also

Set Up a Custom Report Type
Build a Report
Integration Rule Info Fields
Data Statuses

Considerations for Using Data Integration in the Salesforce Mobile App

Review considerations for using Data Integration features on a mobile device.

- Data Assessment for data in AppExchange packages isn't available.
- Account Data Assessment isn't available.
- You can see fields that were updated by data integration rules, but you can't use Data Integration to manually update records.