Wave Analytics Platform Setup Guide

Salesforce, Summer '16

CONTENTS

Wave Platform Setup

Set up your organization to use the Salesforce Wave Analytics platform by enabling Wave, assigning permission set licenses, and then creating and assigning permission sets.

The information here describes how to set up your organization to use the Wave platform. Read #bi_app_prebuilt__bi_app_prebuilt to get started with and set up Sales Wave, Service Wave, and other apps.

Each Analytics Cloud - Wave Analytics Platform license is a single-user license that provides access to the Salesforce Wave Analytics cloud. It includes single Analytics Cloud - Sales Wave Analytics App and Analytics Cloud - Service Wave Analytics App single-user licenses. The table shows data storage limits for each license. If you require more data, you can purchase Analytics Cloud - Additional Data Rows, which entitles you to an additional 100 million rows.

License	Limit
Analytics Cloud - Wave Analytics Platform	100 million rows
Analytics Cloud - Sales Wave Analytics App	25 million rows when used without Analytics Cloud - Wave AnalyticsPlatform license. Use of Sales Wave app license does not increase data limit for platform license
Analytics Cloud - Service Wave Analytics App	25 million rows when used without Analytics Cloud - Wave AnalyticsPlatform license. Use of Service Wave app license does not increase data limit for platform license
Analytics Cloud - Additional Data Rows	100 million rows

Important:

- Wave Analytics license data storage limits are contractual, not technical. Licensee agrees to strictly monitor its total number of data rows.
- If you purchased a Wave Analytics Platform license before October 20, 2015 with Analytics Cloud Builder or Analytics Cloud Explorer permission set licenses: Read Set up the Wave Analytics Platform With Licenses Purchased Before October 20, 2015. If you're migrating users from Builder or Explorer licenses to the new Analytics Cloud - Wave Analytics Platform license: See Migrating From Wave Licenses Purchased Before 10/20/2015 to New Wave Platform Licenses before you start the setup process for those users.
- If you disable Wave Analytics, user permissions are removed from each defined permission set. If you re-enable Wave Analytics later, you must define the permission sets again.

Wave Platform Setup Process

Follow these basic steps to set up your organization to use the Wave Analytics platform.

Enable the Wave platform. The first step when you set up Wave is simply to enable it for your organization.

Assign permission set licenses to users. Next you assign an Analytics Cloud - Wave Analytics Platform permission set license to each user. Each permission set license can be assigned to only one user. Also, the user license that's associated with the user profile must support the Analytics Cloud - Wave Analytics Platform permission set license. Not all user licenses support the Wave platform permission set license.

Define user types and create and assign permission sets. Next, define the main user types in your organization and create permission sets to group related user permissions according to each user type's needs. After you create permission sets, assign them to users. Although you can assign a permission set to an individual user, for efficiency, you can also assign it to groups of users. You can assign multiple permission sets to a user.

Walk Through It: create, edit, and assign a permission set.

You can assign a Wave permission set license along with any of the following Salesforce user licenses:

- Force.com (app subscription)
- Force.com (one app)
- Full CRM
- Salesforce Platform
- Salesforce Platform One

For best results, follow the steps for setting up the Wave Analytics platform in the order shown here.

SEE ALSO:

Set up the Wave Analytics Platform With Licenses Purchased Before October 20, 2015
Migrating From Wave Licenses Purchased Before 10/20/2015 to New Wave Platform Licenses

Learn About Wave Analytics Cloud Permission Set Licenses and User Permissions

Wave Analytics permission set licenses enable the permissions to explore data with and manage the Salesforce Wave Analytics platform. They also let Salesforce Community users view Wave dashboards.

- Each Wave platform user needs an Analytics Cloud - Wave Analytics Platform permission set license to use the Wave platform.
- Community users need an Analytics Cloud - Wave Community Users permission set license to view Wave apps shared via dashboards embedded in Visualforce pages.

The Analytics Cloud - Wave Analytics Platform permission set license enables the following permissions.

User Permission	What It Enables
"Use Wave Analytics"	Accessing Wave Analytics. Viewing and exploring datasets. Viewing and sharing lenses and dashboards.
"Create and Edit Wave Analytics Dashboards"	Creating, editing, and deleting Wave Analytics dashboards.

"Create Wave Analytics Apps"	Creating, editing, deleting, and sharing Wave Analytics applications.
"Upload External Data to Wave Analytics"	Uploading external data to Wave Analytics to create a dataset. Monitoring dataflow and system jobs in the data monitor.
"Edit Wave Analytics Dataflows"	Editing, starting, stopping, and rescheduling the dataflow. Monitoring dataflow and system jobs in the data monitor. Use discretion when assigning this user permission because it enables access all Salesforce object data to which the Integration User has access. See Salesforce Data Access in Wave Analytics.
"Manage Wave Analytics"	Accessing all Wave Analytics features. Provides Wave administrator-level capabilities.
"Download Wave Analytics Data"	Downloading screenshots and data in tabular format through the Wave Analytics user interface.

Note: When you create permission sets for Wave users, selecting any Wave Analytics permission automatically enables the "Use Wave Analytics" permission as well. Also, the type of access granted on an app controls the actions that can be performed on its datasets, lenses, and dashboards. For example, if a user has the "Use Wave Analytics" permission, the user must also have Viewer access on an app to view its datasets, lenses, and dashboards.

The Analytics Cloud - Wave Community Users permission set license enables the "View Wave Analytics on Communities Pages" permission. That permission enables external users to view Wave dashboards embedded in VisualForce pages in their communities.

Identify Wave Analytics Platform User Types

Identifying types of Wave platform users helps assure that the setup process meets your team's analytics needs.

The Wave Analytics Platform license includes the permissions that enable users in your organization to import, work with, and explore data using the Wave platform. The license also includes permissions that let administrators manage Wave. To set up Wave in the most useful way, think through the different ways people access Wave features and categorize them into user types. Here are a few examples.

Most people on your team fall into two basic categories:

- Users, who view Wave dashboards, lenses, and datasets and occasionally import data to Wave.

- Administrators or managers, who access to the full range of Wave functionality to create apps, dashboards, lenses, and datasets, edit data, and otherwise customize the Wave experience.

Accordingly, when you set up the Wave platform, creating two basic permission sets can meet the needs of most of your organization:

- A "view" permission set that contains the permissions needed by most basic-level users when they access Wave.

- A "manage" permission set that's reserved for a select few administrators and managers and contains permissions to use all Wave features

You can set up Wave Analytics however you want, defining other user types and permissions sets based on the needs of users in your organization. For example, you can create a "superuser" permission set for users who create and share apps and dashboards. Or, a "data wizard" permission set would enable other users to work closely with datasets.

We focus on two main types of people on your team -- users and administrators -- in the example permission sets we describe in our detailed setup instructions.

EDITIONS

Available in Salesforce Classic and Lightning Experience.

Available for an extra cost in **Enterprise**, **Performance**, and **Unlimited** Editions. Also available in **Developer** Edition.

Enable Wave Analytics and Assign Analytics Cloud - Wave Analytics Platform Permission Set Licenses

After Salesforce provisions you with the Wave Analytics platform license, enable Wave and assign Wave Analytics permission set licenses.

Enable the Wave Platform

To use the Wave platform, first enable it for your organization.

1. In the Salesforce Setup menu, under Administer, click **Analytics Cloud | Getting Started**.

2. Click **Enable Analytics**.

Assign permission set licenses

Next, assign a permission set license to *each user* in your organization who needs to access Wave.

1. In the Setup menu, click **Manage Users | Users**.

2. Click the name of a user you want to access Wave. You might want to start with **User, Admin**, or whatever name has been given to the system administrator.

3. Position the cursor over **Permission Set License Assignments** and click **Edit Assignments**.

4. Select the Analytics Cloud - Wave Analytics Platform permission set license and click **Save**.

Repeat these steps for every user in your organization who requires access to Wave.

Create Wave Analytics Permission Sets

Give users in your organization access to Wave features by creating and assigning one or more permission sets based on the capabilities they need.

After assigning permission set licenses to users, the next step in the setup process is to create permission sets made up of Wave user permissions and assign them to users. You can create any permission sets you need to meet the needs of your users. We show you how to create two permission sets:

USER PERMISSIONS

To create permission sets:
- "Manage Profiles and Permission Sets"

- *Manage Wave Analytics* permission set, for users who administer and manage Wave Analytics and need access to all Wave Analytics features.

- *View Wave Analytics* permission set, for users who explore data and occasionally upload new data to Wave Analytics and need access to a limited set of Wave Analytics features.

Walk Through It: create, edit, and assign a permission set

> 📝 Note:
>
> - Customers who purchased Wave before October 20, 2015: See Set up the Wave AnalyticsPlatform With Licenses Purchased Before October 20, 2015 before following the instructions here.
> - The Manage Wave Analytics permission set enables the equivalent functionality provided by the previous Wave Analytics Builder license (purchased before October 20, 2015). If you have a Builder license or you're migrating to the new Wave Analytics platform license, follow these steps to create a permission set with the same functionality.
> - The View Wave Analytics permission set enables the equivalent functionality provided by the previous Wave Analytics Explorer license (purchased before October 20, 2015). If you have an Explorer license or you're migrating to the new Wave Analytics platform license, follow these steps to create a permission set with the same functionality.

1. In the Setup menu, under administer, click **Manage Users | Permission Sets** and then click **New**.

2. Enter `Manage Wave Analytics` or `View Wave Analytics` in the Label field, as appropriate. This automatically creates the API name as well. You can change it if you like, but it can't include spaces, end with an underscore, or have two consecutive underscores.

3. In the User License field, keep the default value `--None--`. Do *not* select a user license.

4. Click **Save**. The permission set details page shows the new permission set. Now add user permissions to the set.

5. Scroll to the bottom of the permission set details page, and click **System Permissions**. Then click **Edit**.

6. Do one of the following.

   - If you're creating the Manage Wave Analytics permission set, select "Manage Wave Analytics" user permissions and click **Save**. You've successfully created a permission set that enables a user to access all Wave features. You should assign this permission set sparingly because it provides access to all Wave features, many of which are inappropriate for most analytics users.

   - If you're creating the View Wave Analytics permission set, select "Use Wave Analytics Cloud" and "Upload External Data to Wave Analytics" user permissions and click **Save**. You've successfully created a permission set that enables a user to view the Wave datasets, lenses, and dashboards that they have permission to view, and to upload data files from outside Salesforce.

7. You can now assign your new permission set to users, which is covered in Assign Permission Sets to Users.

Assign Wave Analytics Permission Sets to Users

Assign permission sets to one or more users—either one at a time, or in bulk—to give them access to Wave functionality.

USER PERMISSIONS

To assign a permission set to users:
- "Assign Permission Sets"

   Walk Through It: assign a permission set

1. In the Setup menu, under administer, click **Manage Users | Permission Sets**.

2. Click the permission set you want to assign to users. If you've followed the instructions in Create Wave Analytics Permission Sets on page 4, select either the Manage Wave Analytics or View Wave Analytics permission sets.

3. Click **Manage Assignments** and click **Add Assignments**.

4. Select the users who need access to Wave, and click **Done**.

Assign the Manage Wave Analytics permission set sparingly, since it provides access to all Wave features. Assign it only to users who administer or manage the Wave platform.

Complete Setting up the Wave Analytics Platform

Enhance the Wave platform user experience and fine-tune Wave access to Salesforce data with optional setup procedures.

Enable Preview Thumbnails for All Lenses and Dashboards

Make it easier for users to find their lenses and dashboards on the home page and on app pages. Replace the generic icons with preview thumbnails of the contents of all lenses and dashboards, including those assets that have row-level security restrictions.

If no security predicate is defined for a dataset, then preview thumbnails always appear. If a security predicate is defined, then preview thumbnails don't show unless this setting is enabled. With the setting enabled, preview thumbnails appear for all assets.

🛑 **Important:** Even if row-level security applies to the dataset used by a lens or dashboard, the preview thumbnail could expose data from restricted rows. Row-level security restrictions take effect only after you've clicked through to the lens or dashboard.

1. From Setup, enter `Wave Analytics` in the `Quick Find` box, then select **Settings**.

2. Select `Show preview thumbnails for lenses and dashboards with row level-security enabled`.

3. Click **Save**.

EDITIONS

Available in Salesforce Classic and Lightning Experience.

Available for an extra cost in **Enterprise**, **Performance**, and **Unlimited** Editions. Also available in **Developer** Edition.

USER PERMISSIONS

To modify settings:
- "Manage Wave Analytics"

Enable Wave Analytics for Communities

Securely share Wave Analytics apps with community partner and customer users.

📝 **Note:** Only users with a Customer Community Plus or Partner Community license can use this feature. This feature is supported in communities but not in portals.

To set up Wave Analytics for sharing with Communities, complete the following steps.

1. From Setup, enter `Wave Analytics` in the `Quick Find` box, then select **Settings**. Select `Enable Wave Analytics for Communities`.

2. Assign your community members the Analytics Cloud - Wave Community Users permission set license.

3. Create a permission set that includes the "View Wave Analytics on Communities Pages" permission and assign it to your community members.

EDITIONS

Available in: Salesforce Classic

Available for an extra cost in: **Enterprise**, **Performance**, and **Unlimited** Editions. Also available in: **Developer** Edition

USER PERMISSIONS

To modify settings:
- "Manage Wave Analytics"

To view Wave dashboards and lenses:
- "View Wave Analytics on Communities Pages"

Grant Users Access to the Flex Dashboard Designer

To grant users access to the flex dashboard designer, enable the feature and assign the "Create and Edit Wave Analytics Dashboards" user permission to the users. If you assign the permission but don't enable the feature, the users can't access the new designer, but they can access the old one.

1. From Setup, enter `Wave Analytics` in the `Quick Find` box, then select **Settings**.

2. Select **Enable Flex Dashboard Designer (Beta)**, and then click **Save**.

3. For each user that builds dashboards, assign the "Create and Edit Wave Analytics Dashboards" user permission to them.
   Each user has a choice whether to use the old or new designer for each dashboard.

Connected App for Wave Analytics for iOS

Install the Salesforce Wave Analytics App Package to allow your mobile clients to easily connect to your org. This package contains the Connected App component that gives you control over who's logging in and how your mobile clients share images and links.

1. While logged in as an admin, navigate to
   https://login.salesforce.com/packaging/installPackage.apexp?p0=04tB0000000DKTA.

2. Select **Install for All Users**.

   If you install the Connected App only for certain roles, then only those clients are subject to your policies.

3. After clicking **Done**, click the Salesforce Wave Analytics App Package and then **View Components**.

4. Select iOS or Android. To configure policies and other settings, click **Edit**. When you are finished, save your changes.

   For more information about Connected App settings, see Edit a Connected App.

5. If you want to disable sharing options for mobile users, click **New** in the Custom Attributes section.

   All sharing options are enabled by default. To disable an option, add its attribute key and enter "`false`" for the attribute value. See the table for the supported attribute keys.

Attribute Key	Mobile clients can share	Mobile Device
SHARE_IMAGE_AIRDROP	Images via AirDrop	iOS
SHARE_IMAGE_ CAMERAROLL	Images from Camera Roll	iOS

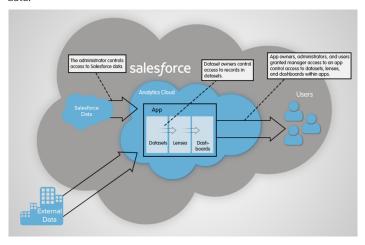| Attribute Key	Mobile clients can share	Mobile Device
SHARE_IMAGE_ OPEN	The image that's currently open on the mobile device	iOS
SHARE_IMAGE_ S1	Images in Salesforce1	iOS
SHARE_IMAGE_ EMAIL	Images through email	iOS
SHARE_LINK_NFC	Links via Near Field Communication (NFC)	Android
SHARE_LINK_BLUETOOTH	Links over Bluetooth	Android
SHARE_LINK_AIRDROP	Links via AirDrop	iOS
SHARE_LINK_ CLIPBOARD	The link that's currently in the clipboard of the mobile device	iOS and Android
SHARE_LINK_ S1	Links in Salesforce1	iOS and Android
SHARE_LINK_EMAIL	Links through email	iOS and Android
SPOTLIGHT_SEARCH	Mobile clients can see Wave Analytics assets in Spotlight search results	iOS

> 📝 **Note:** To apply custom attributes to connected users, you can revoke them and ask them to reconnect.

6. To view and control how mobile clients connect to your Wave-enabled org, from Setup, enter `Connected Apps` in the `Quick Find` box, then select **Connect Apps OAuth Usage**.

   You can block user sessions, revoke individual users, and drill in to user details. For more information, see Monitoring Usage for a Connected App.

> 📝 **Note:** For certificate-based authentication, users must set their desktop browsers to allow cookies.

Wave Analytics Security Implementation Guide

Wave Analytics has different levels of security that your organization can implement to ensure that the right user has access to the right data.

- The administrator can implement object-level and field-level security to control access to Salesforce data. For example, the administrator can restrict access to prevent the dataflow from loading sensitive Salesforce data into datasets. This document describes how Wave Analytics uses object-level and field-level security on Salesforce data and how to configure permissions on Salesforce objects and fields.

- Dataset owners can implement row-level security on each dataset that they create to restrict access to it's records. If a dataset does not have row-level security, users who have access to the dataset can view all records. This document describes how to configure row-level security on datasets and provides some sample implementations based on datasets created from Salesforce data and external data.

- App owners, administrators, and users granted manager access to an app control access to datasets, lenses, and dashboards within apps. This document describes the different levels of access for apps and how to share datasets, lenses, dashboards in an app with other users.

  ☑ Note: Wave Analytics doesn't synchronize with sharing that's configured in Salesforce. Instead, you configure security separately in Wave Analytics. Wave Analytics provides a robust row-level security feature that enables you to model many different types of access controls on datasets.

For complete information about implementing Wave Analytics security, see Wave Analytics Security Implementation Guide.

Salesforce Data Access in Wave Analytics

Wave Analytics requires access to Salesforce data when extracting the data and also when the data is used as part of row-level security. Wave Analytics gains access to Salesforce data based on permissions of two internal Wave Analytics users: Integration User and Security User.

Wave Analytics uses the permissions of the Integration User to extract data from Salesforce objects and fields when a dataflow job runs. Because the Integration User has View All Data access, consider restricting access to particular objects and fields that contain sensitive data. If the dataflow is configured to extract data from an object or field on which the Integration User does not have permission, the dataflow job fails.

When you query a dataset that has row-level security based on the User object, Wave Analytics uses the permissions of the Security User to access the User object and its fields. The Security User must have at least read permission on each User object field included in a predicate. A predicate is a filter condition that defines row-level security for a dataset. By default, the Security User has read permission on all standard fields of the User object. If the predicate is based on a custom field, then grant the Security User read access on the field. If the Security User does not have read access on all User object fields included in a predicate expression, an error appears when you try to query the dataset using that predicate.

Control Access to Salesforce Objects and Fields

Wave Analytics requires access to Salesforce data when extracting the data and also when the data is used as part of row-level security. Configure the permissions of the Integration User on Salesforce objects and fields to control the dataflow's access to Salesforce data. Configure the permissions of the Security User to enable row-level security based on custom fields of the User object.

When configuring permissions for the Integration User or Security User, make changes to a cloned version of the user profile.

1. From Setup, enter `Profiles` in the `Quick Find` box, then select **Profiles**, and then select the user profile.

   For the Integration User, select the Analytics Cloud Integration User profile. For the Security User, select the Analytics Cloud Security User profile.

2. Click **Clone** to clone the user profile.

USER PERMISSIONS

To clone a user profile:

- "Manage Profiles and Permission Sets"

To edit object permissions:

- "Manage Profiles and Permission Sets"

  AND

  "Customize Application"

3. Name and save the cloned user profile.

4. Click **Object Settings**.

5. Click the name of the Salesforce object.

6. Click **Edit**.

   a. To enable permission on the object, select **Read** in the Object Permissions section.

   b. To enable permission on a field of the object, select **Read** for the field in the Field Permissions section.

      Note: You can't change the permissions on standard fields of the User object.

7. Save the object settings.

8. Assign the cloned user profile to the Integration User or Security User.

   a. From Setup, enter *Users* in the Quick Find box, then select **Users**.

   b. Select the user to which you want to assign the user profile.

   c. Click **Edit**.

   d. In the Profile field, select the user profile.

   e. Click **Save**.

9. Verify that the Integration User or Security User has the right permissions on fields of the objects.

Set up the Wave Analytics Platform With Licenses Purchased Before October 20, 2015

If you purchased Wave Analytics Builder or Explorer licenses before October 20, 2015, you can continue to use your licenses to set up the Wave plaform for users in your organization or you can migrate to the new single-user Wave Analytics platform license.

Note: This information applies only to customers who purchased Wave Analytics licenses before October 20, 2015, and continue to use the Analytics Cloud Builder or Analytics Cloud Explorer permission set licenses after that without migrating to the new Analytics Cloud Wave Platform license. If you purchased Wave on or after October 20, 2015, go to Wave Platform Setup.

Important: If you're migrating from the previous Analytics Cloud Builder or Analytics Cloud Explorer platform licenses to the single-user Wave Analytics platform license, read Migrating From Wave Licenses Purchased Before 10/20/2015 to New Wave Platform Licenses.

The Analytics Cloud Wave Platform License

Analytics Cloud Wave Platform license purchased before October 20, 2015, enable you to turn on Wave Analytics for your organization. Each previous Wave Platform license is contractually limited to a maximum of 400 users. If you need more than 400 users, you can purchase additional Wave Platform licenses.

Each previous Wave Platform license enables you to:

- Store up to 250,000,000 rows in your final registered datasets.
- Run up to 50 concurrent queries in Wave Analytics.

The Analytics Cloud Permission Set Licenses

Each user needs an Analytics Cloud permission set license to use the product. The permission set license defines what user permissions can be assigned to the user. The administrator assigns permission set licenses to users.

As part of Wave Analytics platform licenses sold before October 20, 2015, Salesforce provides the following permission set licenses:

- Analytics Cloud Builder permission set license enables users to access all Wave Analytics features.
- Analytics Cloud Explorer permission set license enables users to upload external data to Wave Analytics and explore data.

Here are Wave Analytics user permissions included with each permission set license.

User Permission	Included in Explorer or Builder Permission Set License?	What It Enables
"Create and Edit Wave Analytics Dashboards"	Builder only	Creating and editing Wave Analytics dashboards.
"Create Wave Analytics Apps"	Builder only	Creating and sharing Wave Analytics applications.
"Edit Wave Analytics Dataflows"	Builder only	Downloading, uploading, starting, stopping, and rescheduling the dataflow. Viewing dataflow and system jobs in the data monitor.
"Manage Wave Analytics"	Builder only	Accessing all Wave Analytics features. Provides Wave administrator-level capabilities.
"Upload External Data to Wave Analytics"	Builder and Explorer	Uploading external data to Wave Analytics to create a dataset. Viewing dataflow and system jobs in the data monitor.
"Use Wave Analytics"	Builder and Explorer	Using Wave Analytics, and viewing the datasets, lenses, and dashboards that the user has permission to view. Automatically enabled when you select any other Wave permission.

Note: When you create permission sets for Wave users, selecting any of the other Wave Analytics permissions automatically enables the "Wave Analytics" permission.

You can assign previous Wave Analytics permission set licenses along with any of the following Salesforce user licenses:

- Force.com (app subscription)
- Force.com (one app)
- Full CRM
- Salesforce Platform

- Salesforce Platform One

SEE ALSO:

[Migrating From Wave Licenses Purchased Before 10/20/2015 to New Wave Platform Licenses](#)

Migrating From Wave Licenses Purchased Before 10/20/2015 to New Wave Platform Licenses

To complete migration from previous Analytics Cloud Builder and Analytics Cloud Explorer licenses purchased before October 20, 2015, to the new Analytics Cloud - Wave Analytics Platform license, you may need to set up Wave users in your organization with new permission sets.

When Salesforce provisions your organization with the new Analytics Cloud - Wave Analytics Platform license, you may have to set up some users with the new license.

- **Builder license users.** Users who access Wave with the Analytics Cloud Builder permission set license should be able to continue to use the Wave Analytics platform without any additional setup. The Builder license is simply renamed *Analytics Cloud - Wave Analytics Platform*, and you'll see that permission set license in Salesforce Setup.

- **Explorer license users.** During the new license provisioning process, Salesforce may remove the Analytics Cloud Explorer license from your org. If that's the case, you'll see the new Analytics Cloud - Wave Platform license instead of the Explorer license and you have to set up users with that license. If the Explorer permission set license is still visible, you do not have to repeat the setup process for Explorer users.

> **EDITIONS**
>
> Available in Salesforce Classic and Lightning Experience.
>
> Available for an extra cost in **Enterprise**, **Performance**, and **Unlimited** Editions. Also available in **Developer** Edition.

If users in your organization require you to set them up with the new Analytics Cloud - Wave Platform license—even if they used Wave with a previous license—follow the steps in [Wave Platform Setup](#) on page 1. You need to assign them the new permission set license, create one or more new permission sets, and assign the permission sets to users.

Wave Analytics Limits

This section describes Wave Analytics limits.

The following limits apply to all supported editions. Contact salesforce.com to extend the limits.

API Call Limits

Limit	Value
Maximum concurrent Wave Analytics API calls per organization	100
Maximum Wave Analytics API calls per user per hour	5,000

Wave Analytics License Data Storage Limits

> 📝 Note: The data limits shown in the following table apply *only* to Analytics Cloud - Wave Analytics Platform and Analytics Cloud - Sales Wave Analytics App and Service Wave Analytics app licenses purchased on or after October 20, 2015.

License	Limit. Wave Analytics license data storage limits are contractual, not technical. Licensee agrees to strictly monitor its total number of data rows.
Analytics Cloud - Wave Analytics Platform	100 million rows
Sales Wave and Service Wave apps	25 million rows when used without Analytics Cloud - Wave Analytics Platform license. Use of Sales Wave and Service Wave app licenses does not increase data limit for platform license
Analytics Cloud - Additional Data Rows	100 million rows

Dataset Storage Limits

Limit	Value
Maximum number of rows for all registered datasets combined.	250 million per platform license *purchased before* October 20, 2015. 📝 **Note:** For best performance, we recommend datasets to be in the range of 100M records. Several items, such as the size of the records, and cardinality of measures, can significantly or adversely affect performance.
Maximum number of fields in a dataset	5,000 (including up to 1,000 date fields)
Maximum value for each numeric field in a dataset	36,028,797,018,963,967
Minimum value for each numeric field in a dataset	-36,028,797,018,963,968

Dataflow Limits

Limit	Value
Maximum number of dataflow runs in a rolling 24-hour period	24

📝 **Note:** Wave uses the bulk API, which counts towards your Salesforce bulk API limits. The dataflow submits a separate bulk API call to extract data from each Salesforce object. The dataflow uses a batch size of 100K to 250K, depending on whether the dataflow or the bulk API chunks the data. As a result, to extract 1 million rows from an object, the dataflow creates 4-10 batches.

Sales Wave App Limits

Sales Wave limits custom object support to no more than ten custom objects and one dataflow for each org that implements the app. These are contractual, not technical, limits.

External Data Limits

Limit	Value
Maximum file size per external data upload	If you use the External Data API: 40 GB.

Limit	Value
	If you use the user interface: 512 MB.
Maximum file size for all external data uploads in a rolling 24-hour period	50 GB
Maximum number of external data files that can be uploaded in a rolling 24-hour period	50
Maximum number of characters in a field	32,000
Maximum number of fields in a record	5,000 (including up to 1,000 date fields)
Maximum number of characters for all fields in a record	400,000

Query Limits

Limit	Value
Maximum concurrent queries per organization	50 per platform license
Maximum concurrent queries per user	10
Maximum number of rows returned per query 10,000 is the default value. To set a different value, use the SAQL `limit` statement.	10,000
Query timeout	2 minutes

The following limits apply to the Wave-enabled Developer Edition.

Developer Edition Limits

Limit	Value
Maximum number of data rows	250,000
Maximum concurrent queries	5

> **Note:** Wave is built on force.com platform and is subject to the force.com platform limits. For example, the SOQL query limit (20,000 characters) controls the number of fields from which the sfdcDigest transformation can extract data. If you exceed a force.com limit, an error occurs. See force.com platform limits.

Wave Analytics Limitations

Wave Analytics differs from other Salesforce features in some ways.

Releases Aren't Staggered

All customers receive Wave Analytics updates on the same schedule, regardless of instance. Related core updates happen by instance on a staggered schedule.

Localization

Wave Analytics has been localized with the following exceptions.

- We do not support right-to-left languages, such as Arabic and Hebrew.
- A subset of error messages may only be available in English.
- The mobile iOS app includes only English versions of sample datasets and dashboards.

Limited Internationalization Support

Wave Analytics provides internationalization support with the following limitations.

- You must set both locale and language to see translated labels.
- Actual data within datasets is not localized.
- Each dataset may have a single locale specified in the metadata. The metadata locale is not overridden by individual users' locale settings. All users see the same date, time, and number formats, as well as dimension names, regardless of their own locale and language settings.
- Search in filters is both case-sensitive and accent-sensitive. For example, using the filter "Andre" does not return "André" in the results.
- Multicurrency is not supported. When Wave Analytics extracts your organization's default currency, it uses the currency for monetary values and doesn't convert to another currency.
- Sorting data within datasets may not work as expected.

Accessibility Features Aren't Supported

Accessibility features haven't been incorporated into Wave Analytics.

Limited Field-Level Security

Field-Level security isn't available for external data that's uploaded via files. Field-level security that was implemented in the original database or Salesforce object isn't preserved when the data is loaded into a Wave Analytics dataset. For more information, see the Wave Analytics Security Implementation Guide.

Sales Wave Data Requirements

Sales Cloud data must meet the following requirements for Sales Wave dashboards to function correctly:

- Use standard sales objects.
- Have at least one event and one task connected with an opportunity.
- Enable history tracking for Amount, Stage, and CloseDate fields on the Opportunities object.
- Cases must be connected to Accounts if you choose to import Cases data to Sales Wave using the configuration wizard.
- There are two requirements if you choose to import Leads data to Sales Wave using the configuration wizard.
    1. At least one lead must be converted to an opportunity.

2. The lead must be connected to an account.

- There are two requirements if you choose to import Campaigns data to Sales Wave using the configuration wizard.

    1. At least one opportunity must be connected to a campaign.

    2. At least one campaign member must be connected to a campaign.

- There are two requirements if you choose to import opportunity record types to Sales Wave using the configuration wizard.

    1. At least one opportunity record type must be defined.

    2. The opportunity record type must be connected to at least one opportunity.

Sales Wave Support for Salesforce Objects and Fields

Sales Wave supports all Salesforce standard and custom objects and data. However, when you first create the app by default it includes only a predefined set of objects and fields.

Sales Wave creates a dataflow that exposes selected fields from the following standard Salesforce objects:

- Accounts
- Users
- Roles
- Opportunities
- Products (Opportunities line item)
- Tasks
- Events

Sales Wave supports standard and custom fields on standard Salesforce objects. The fields provided are determined by the answers you provide when you create the app using the built-in configuration wizard.

> **Note:** Sales Wave limits custom objects support to no more than ten custom objects for each org that implements Sales Wave. This is a contractual limitation, not a technical one.

To add custom objects or additional fields not included when you first create the app, you need to update the Sales Wave dataflow. For details see Create Datasets with a Dataflow.

Sales Wave Support for Non-Salesforce Data

Sales Wave does not support external data sources except a CSV file that contains quota data at the user level. Importing other external data requires an additional license. See your Salesforce representative for details.

> **Note:** To include data about quotas in Sales Wave, you need to upload a CSV file with the details. For more information, see Update the Sales Wave App Quota (Target) Dataset.

Service Wave Data Requirements

Service Cloud data must include at least one each of the following for Service Wave dashboards to function correctly:

- Events
- Tasks
- Closed cases

- Published articles attached to a case or an opportunity

Custom formula fields on the Cases object need to exist or be created for the following:

- SLA missed (text field)
- FCR (Boolean)

Service Wave Support for Salesforce Objects and Fields

Service Wave supports all Salesforce standard and custom objects and data. However, when you first create the app by default it includes only a predefined set of objects and fields. The app creates a dataflow that exposes selected fields from the following Salesforce objects:

- Account
- Cases
- Contact
- Events
- User
- UserRole
- Task

Service Wave may also use fields from the following options depending on the answers you select in the configuration wizard:

- CaseArticle
- CaseHistory
- CSAT (custom object)
- Group
- A single Knowledge Article Type (custom object)
- RecordType
- Opportunity

Service Wave supports standard and custom fields on standard Salesforce objects. The fields provided are determined by the answers you provide when you create the app using the built-in configuration wizard.

📝 **Note:** Service Wave limits custom objects support to no more than ten custom objects for each org that implements Service Wave. This is a contractual, not a technical, limitation.

To add custom objects or additional fields not included when you first create the app, you need to update the Service Wave dataflow. For details see Create Datasets with a Dataflow.

Additional Service Wave Limitations

Service Wave does not support external data sources or registering new datasets from the app-generated dataflow.

Including CSAT score in dashboards/dataflow is optional. The app configuration wizard lets you associate CSAT from a custom case field or Custom Object associated to the Cases object.

You need to manually add any security predicates or other dataset filters to the app dataflow.

The app does not support multi-hierarchy (team/manager) when you create it. You need to manually add that functionality.

The Knowledge Usage dashboard currently reports on a single Article Type, which you select when you use the configuration wizard.

Actions Menu Support for Objects and Actions

The current actions menu implementation provides limited support for Salesforce objects and actions.

You can currently create Wave quick actions menus for custom objects, sObjects, as well as the following standard Salesforce objects:

- Account
- Cases
- Lead
- Opportunity

Actions on Contacts, User, or User Profile page layouts are not supported.

The current implementation of action menus supports Chatter actions (Post, File, Thanks, Link, Poll, and Question), object-specific actions, and global actions. It does not support Salesforce1 actions.

Other objects and actions will be supported in future releases.