Salesforce Mobile Notifications Implementation Guide

Salesforce, Spring '21

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@salesforcedocs

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CONTENTS

MOBILE NOTIFICATIONS OVERVIEW

Mobile notifications on Lightning Platform allow mobile app developers to notify their customers when business events occur in customers' orgs. Salesforce provides considerable flexibility for using mobile notifications. You can push notifications to devices or deliver them within an app.

All notifications sent from Salesforce can support both Salesforce apps and custom apps. You can define custom types to fit your own business needs. However, an org can limit the types it allows and their routings.

Lightning Platform provides two server-side notification systems:

Notification Builder
: Full-featured, UI-centric platform. Notification Builder is integrated with the core notifications framework that powers Chatter and other Salesforce apps. As a result, you can use familiar Salesforce tools for creating, scheduling, and sending notifications. For example, you can send invocable action notifications through Process Builder, Flow, or REST API. You can also retrieve past notifications for use in custom in-app notification displays. You can send notifications to both Salesforce apps and customer apps.

Apex
: Legacy code-based platform for push notifications only. With Apex notifications, Apex triggers capture business events in the customer's org. Apps can then send push notifications with either Apex or Connect REST APIs. Apex push does not retain notification payloads for subsequent use.

A few considerations guide your choice of platform.

- If you have an existing Apex push implementation, the legacy platform remains fully supported.
- Consider which notification features suit your business needs. Types include:

  Mobile push notifications
  : Notifications sent in reaction to an event. For example, push notifications usually arrive on mobile devices while the customer isn't looking at the app. Salesforce supports two types of push: Apex push—traditional "send, fire, and forget" mechanism—and Notification Builder push, which boasts a richer feature set. Notification Builder push notifications require you to subscribe your connected app to the custom notification types you plan to send.

  In-app notifications
  : Notifications sent to customers while they're using either the Salesforce mobile app, another Salesforce app, or any properly configured custom app. In Salesforce mobile app, customers receive these notifications in the Notification Bell. Other client apps can implement their own notification displays using Notification Builder APIs.

  Custom notification types
  : Notifications that you create through Notification Builder in Setup to suit your unique business needs. You can then send notifications of those types through Process Builder, Flow Builder, or the invocable action API.

  Configurable delivery settings and preferences
  : For custom notifications types, you can select delivery channels—desktop, mobile, or both. You can choose to subscribe your connected apps to custom notification types to have them returned by the API to your custom in-app notification tray. If preferred, you can also send your subscribed notifications as push notifications.

  Invocable action notifications
  : You can send custom notifications as invocable actions using the `customNotificationAction` API.

  Scheduled notifications
  : In Process Builder, you can schedule a notification to be sent when triggered by a record change, platform event, or process. In Flow Builder, you can schedule the `customNotificationAction` API to send custom notifications at predefined intervals.

- Notification platforms support the following types and features:

Type or Feature	Apex Push	Notification Builder Platform
Push notifications	Supported	Supported
Subscriptions	Not supported	Supported
Scheduled notifications	Not supported	Supported
Invocable action notifications	Not supported	Supported
In-app notifications	Not supported	Supported
Retrievable payloads	Not supported	Supported
Custom notification types	Not supported	Supported
Encryption	Not supported	Supported

- Notification systems deliver payloads and the list of recipients to services operated by device OS vendors—Apple, Google—for delivery to customers' mobile devices. Salesforce preserves sent Notification Builder notifications and provides APIs for retrieving them.

  To handle events that Apex triggers can't catch—for example, from sources outside of Salesforce—Connect REST API provides an alternative sending mechanism on page 32. You can use Connect REST API to send either Apex push or Notification Builder invocable actions.

All apps that intend to receive mobile notifications require:

A Salesforce connected app configuration on the Salesforce server

All Salesforce mobile notifications use the connected app framework. They support customer apps built in-house, Mobile SDK apps distributed through the App Store or Google Play, and partner or ISV apps installed through managed packages.

Registration with targeted mobile OS vendors—Apple and Google

You must register as a developer of apps that are designed to receive notifications. This registration is separate from the runtime registration that an app performs to receive notifications.

Minimal coding in client apps

Mobile SDK provides boilerplate implementations for app notification registration. You can choose whether to go further with features such as in-app notifications.

Server-side coding

Depending on the mechanism used, sending push notifications can require coding of Apex triggers or REST API calls.

This guide covers these configuration tasks, and also testing and sending notifications. To learn how to use Notification Builder functionality in Salesforce, see Manager Your Notifications with Notification Builder. For notification types, see Salesforce App Notification Types.

Note: These instructions do not apply to Marketing Cloud apps. To implement Marketing Cloud MobilePush notifications, see MobilePush and Journey Builder for Apps SDKs.

See Also

- Create a Custom Notification Type
- Send Custom Notifications

- Send Notifications to a Connected App
- Send Custom Notifications with Notification Builder Platform
- Send a Custom Notification from a Process
- Flow Core Action: Send Custom Notification

IN THIS SECTION:

Push Notification Registration and Flow

To enable push notifications, you register with several different entities and configure the required settings.

Entities involved when sending a push notification include:

- The OS vendor that delivers the notification to devices
- The Salesforce organization that sends the notification
- The mobile devices that receive and display the notification

Here is an outline of the registration process for developers.

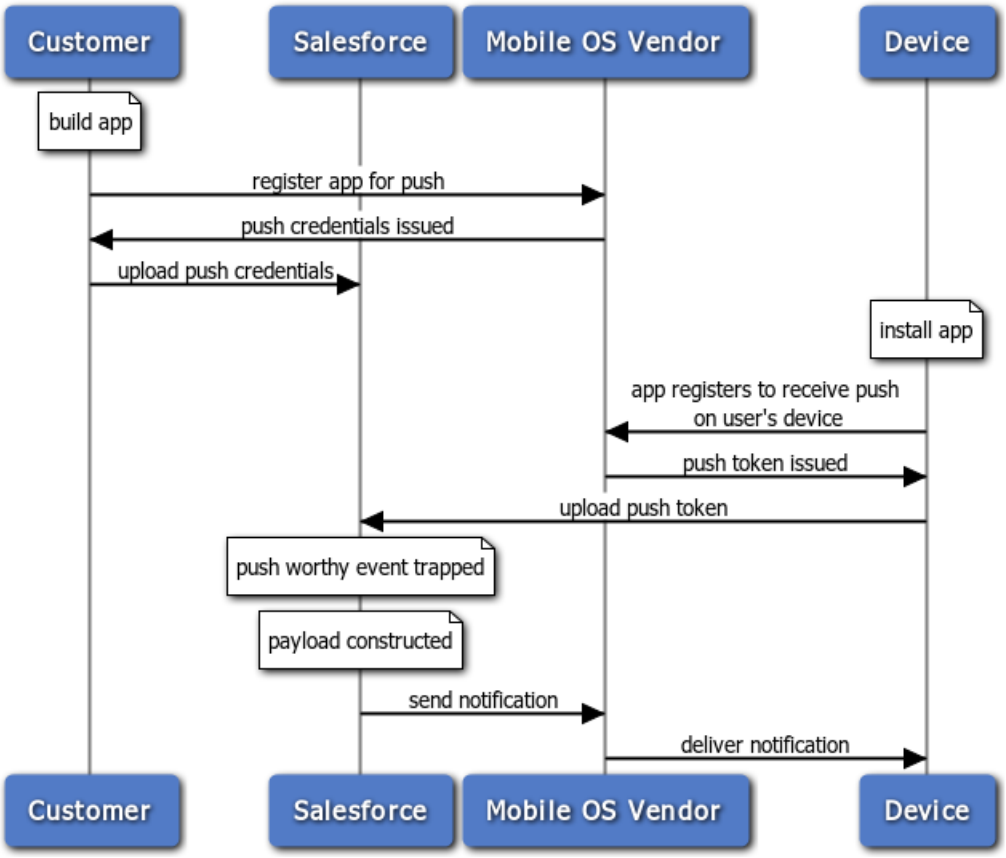
1. Register with the mobile OS vendor, such as Apple or Google, for push service.
2. Create a connected app in Salesforce to upload the push credentials, such as the iOS `.p12` certificate or the Android token.
3. Enable the mobile client app to handle push notifications using the Salesforce Mobile SDK.
4. Write Apex triggers to send push notifications when certain events occur on Salesforce records.
5. (For partners only) For partners who are developing the push notification triggers for other customer organizations, this additional step should be performed.

   Create a managed package containing the connected app and Apex triggers. Distribute this package to customer organizations.

The following figure illustrates the complete push notification flow for customers who develop their own mobile apps and Apex triggers. The flow consists of the following sequence of events:

1. Developer registration with the OS vendor (Apple in this figure)
2. Connected app setup in Salesforce
3. Sending the push notification via the trigger from the Salesforce organization
4. Delivery of the push notification to mobile devices by the OS vendor

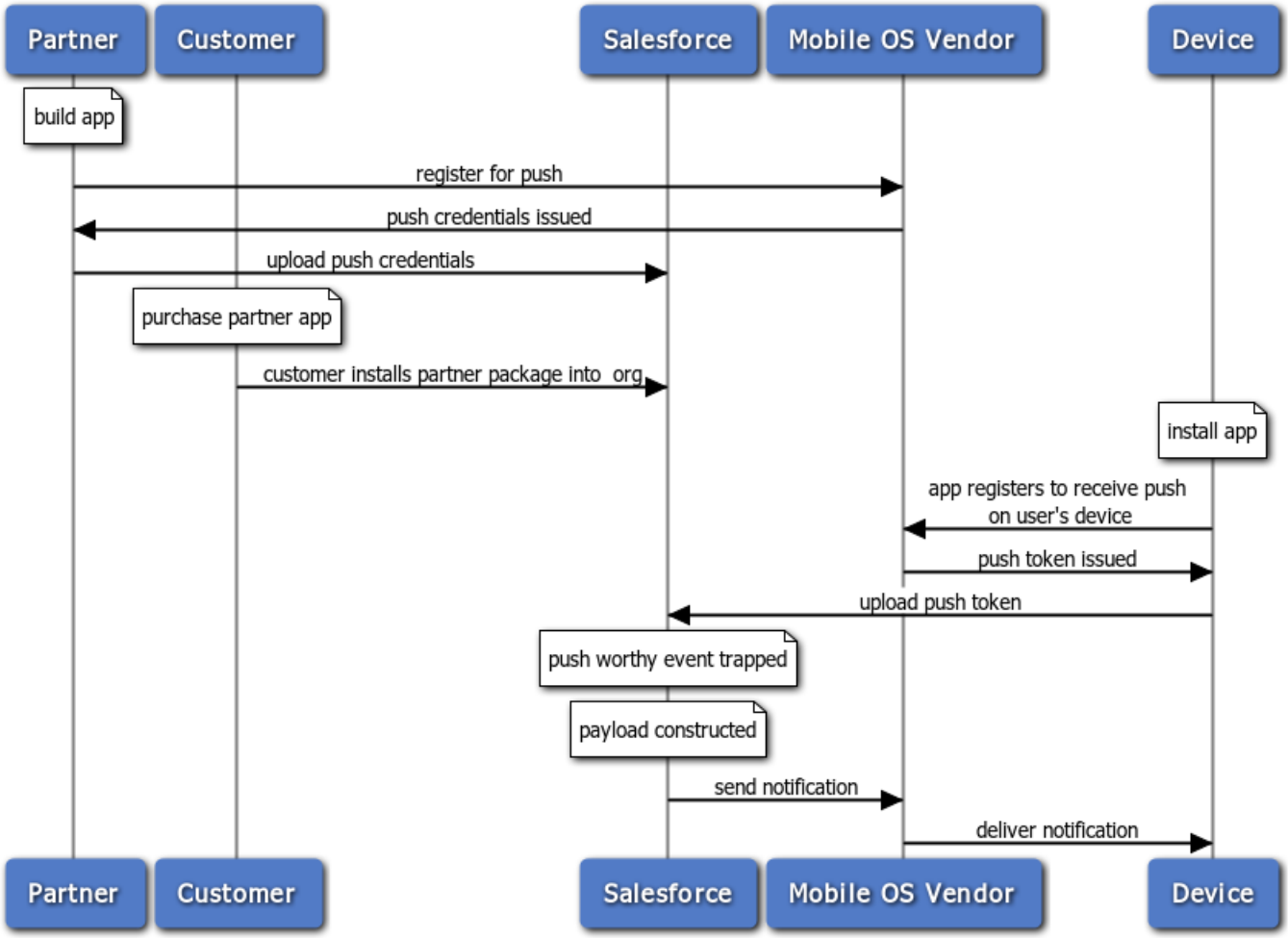
Push Notification Flow for Customers



The Push Notification Service sends the message to the users specified in the `send` call of the Apex `Messaging.PushNotification` class.

This next figure illustrates the complete push notification flow for partners and customers. In addition to the flow represented in the previous diagram, this flow includes steps for customers who have installed the partner's package. It includes purchase of the partner app, and installation of the partner's package to get the connected app and the Apex triggers. The last few steps of sending and delivering the push notification are similar to the previous flow.

Push Notification Flow for Partners and Customers



STEPS FOR IMPLEMENTING MOBILE NOTIFICATIONS

To implement mobile notifications, you configure each of the participating technologies.

IN THIS SECTION:

Step 1. Developer Registration with Mobile OS Vendors

This step asks the OS vendor to be prepared to handle Salesforce push notifications sent to your app. Developer registration also provides some information you'll need to finish configuring your Salesforce connected app.

To register your mobile client app, follow the process for your target mobile OS.

Android Registration

When developing an Android app that supports push notifications, remember these key points:

- You must be a member of the Android Developer Program.
- You can test FCM push services only on an Android device with either the Android Market app or Google Play Services installed. Push notifications don't work on an Android emulator.

Salesforce sends push notifications to Android apps through the Firebase Cloud Messaging for Android (FCM) framework. See https://firebase.google.com/docs/cloud-messaging for an overview of this framework.

To begin, create a Google API project for your app. Your project must have the FCM for Android feature enabled. See https://firebase.google.com/docs/cloud-messaging/android/client for instructions on setting up your project.

The setup process for your Google API project creates a key for your app. Once you've finished the project configuration, you'll need to add the Key for Server Applications (API Key) from FCM to your connected app settings.

Note: Push notification registration occurs at the end of the OAuth login flow. Therefore, an app does not receive push notifications unless and until the user logs into a Salesforce org.

iOS Registration

When developing an iOS app that supports push notifications, remember these key points:

- You must be a member of the iOS Developer Program.
- You can test Apple push services only on an iOS physical device. Push notifications don't work in the iOS simulator.
- There are no guarantees that all push notifications will reach the target device, even if the notification is accepted by Apple.
- Apple Push Notification Services setup requires the use of the OpenSSL command line utility provided in Mac OS X.

Before you can complete registration on the Salesforce side, you need to register with Apple Push Notification Services (APNS).

Registration with APNS requires the following items.

Certificate Signing Request (CSR) File
Generate this request using the Keychain Access feature in Mac OS X. You'll also use OpenSSL to export the CSR private key to a file for later use.

App ID from iOS Developer Program
In the iOS Developer Member Center, create an ID for your app, then use the CSR file to generate a certificate. Next, use OpenSSL to combine this certificate with the private key file to create an `appkey.p12` file. You'll need this file later to configure your connected app.

iOS Provisioning Profile
From the iOS Developer Member Center, create a new provisioning profile using your iOS app ID and developer certificate. You then select the devices to include in the profile and download to create the provisioning profile. You can then add the profile to Xcode. Install the profile on your test device using Xcode's Organizer.

When you've completed the configuration, sign and build your app in Xcode. Check the build logs to verify that the app is using the correct provisioning profile. To view the content of your provisioning profile, run the following command at the Terminal window:
`security cms -D -i <your profile>.mobileprovision`

For detailed instructions see:

- Local and Push Notification Programming Guide at https://developer.apple.com/library/mac
- http://www.raywenderlich.com/32960/

Step 2. Creating a Connected App

USER PERMISSIONS

To read, create, update, or delete connected apps:	Customize Application AND either Modify All Data OR Manage Connected Apps
To update all fields except Profiles, Permission Sets, and Service Provider SAML Attributes:	Customize Application AND either Modify All Data OR Manage Connected Apps
To update Profiles, Permission Sets, and Service Provider SAML Attributes:	Customize Application AND Modify All Data AND Manage Profiles and Permission Sets
To install and uninstall connected apps:	Customize Application AND either Modify All Data OR Manage Connected Apps
To install and uninstall packaged connected apps:	Customize Application AND either Modify All Data OR Manage Connected Apps AND Download AppExchange Packages

EDITIONS

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

Connected Apps can be created in: **Group**, **Professional**, **Enterprise**, **Essentials**, **Performance**, **Unlimited**, and **Developer** Editions

Connected Apps can be installed in: **All** Editions

Once you've registered your mobile app with the OS vendor's push service, the next step is to create a connected app in Salesforce.

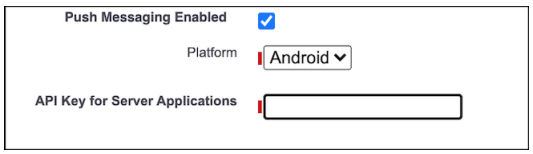
The Salesforce connected app enables you to provide the registration certificate or token of your mobile client app so that Salesforce can send push notifications. Also, the connected app provides the unique API name that identifies the mobile app to send notifications to.

IN THIS SECTION:

Create a Connected App for Android

To create a connected app, log in to your Salesforce Developer Edition org and perform these steps.

1. From Setup, enter *Apps* in the `Quick Find` box, then select **Apps**.
2. In the Connected Apps section, click either **Edit** next to an existing connected app, or **New** to create a new connected app.
3. If you're creating a new connected app:
   a. Enter a unique name for your connected app. The API name field is auto-filled.
   b. Optionally, fill in other fields, such as a description for your connected app.
   c. Enter a contact email address.
   d. In the OAuth Settings section, select **Enable OAuth Settings**.
   e. Enter a callback URL.
   f. Select OAuth scopes. At a minimum, select **Access and manage your data (api)** and **Perform requests on your behalf at any time (refresh_token)**.
4. Under Mobile App Settings, select **Push Messaging Enabled**.
5. For Platform, select **Android**.
6. For API Key for Server Applications, enter the key you obtained during the developer registration with FCM.

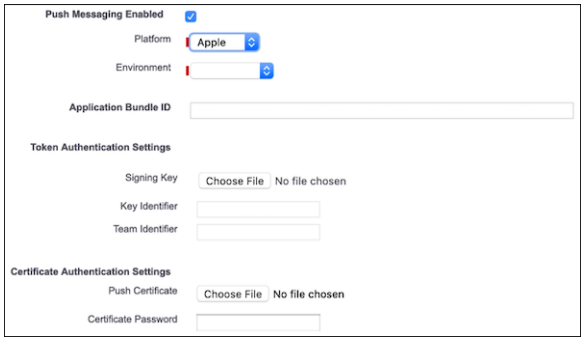


7. Click **Save**.
   After saving a new connected app, you'll get a consumer key. Mobile apps use this key as their connection token.

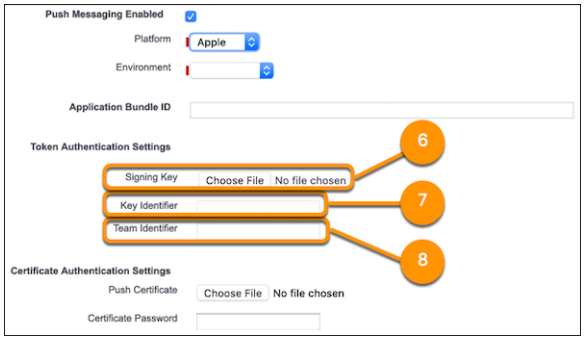
Create a Connected App for Apple iOS

To create a connected app, log in to your Salesforce Developer Edition org and perform these steps.

1. From Setup, enter *Apps* in the `Quick Find` box, then select **Apps**.
2. In the Connected Apps section, click either **Edit** next to an existing connected app, or **New** to create a new connected app.
3. If you're creating a new connected app:
   a. Enter a unique name for your connected app. The API name field is auto-filled.
   b. Optionally, fill in other fields, such as a description for your connected app.
   c. Enter a contact email address.
   d. In the OAuth Settings section, select **Enable OAuth Settings**.
   e. Enter a callback URL.
   f. Select OAuth scopes. At a minimum, select **Access and manage your data (api)** and **Perform requests on your behalf at any time (refresh_token)**.
4. Under Mobile App Settings, select **Push Messaging Enabled**.
5. For Platform, select **Apple**.
   When you select the **Apple** option, the dialog expands to show more settings.



6. Upload the Signing Key from your Apple developer account.
7. Enter the Key Identifier from your Apple developer account.
8. Enter the Team Identifier from your Apple developer account.



Note: You can use authentication tokens, push certificates, or both. If a token is provided, Salesforce always uses the token. We also use Application Bundle ID when it is provided. We recommend using Application Bundle ID to avoid problems with your push notification settings.

Testing Your Connected App Push Configuration

To run a quick test of your push notification setup, use the Send Test Notification page. Troubleshoot round-trip push notifications in a synchronous mechanism without having to configure custom notification types, Apex calls, or REST calls. You can also gain insights into what's going on behind the scenes in the asynchronous environment of real-world push notifications.

About the Send Test Notification Page

The Send Test Notification page uses information from your Apple Push Notification Service (APNS) or Firebase Cloud Messaging (FCM) for Android. setup to configure a synchronous push mechanism. You select a device to receive the push notification by entering a connection token string. If you don't know the token string, you can use the Search tool to select from the list of devices that are registered for your connected app. The Search tool automatically displays the five most recently registered devices. You can also enter a user's name to search for devices that are registered to that user.

For Android FCM push notifications, you can select the Dry Run option to test your FCM setup. This option sends the notification to the FCM server but does not forward it to a device.

You can use any JSON-formatted payload for a dry-run test. For example, you can start with something as simple as `{"alert": "test"}`.

Each push attempt returns a status message that indicates success or failure. See Error Messages for Push Notifications for explanations of messages. For additional information, see:

- developer.apple.com for information on Apple APNS push notifications.
- firebase.google.com for information on FCM for Android push notifications.

To reach the test page:

1. In Setup, enter *Apps* in the Quick Find box, then select **Apps**.
2. Click the name of your connected app.
3. Click **Send test notification** next to Supported Push Platform. This link appears only if you've configured your connected app to support mobile push notifications.

Important: Successful test push notifications apply against the push notification daily limits for your organization.

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Connected Apps can be installed in: **All** Editions

USER PERMISSIONS

To send a push notification from the Test Push Notifications page:

- Author Apex

  AND

  Manage Connected Apps

IN THIS SECTION:

Check a User's Mobile Push Registrations

From a User page in your organization, an administrator can easily check which of the user's devices are currently registered for push notifications. Checking the registrations may help you troubleshoot push notification failures.

SEE ALSO:

Error Messages for Push Notifications

Push Notification Limits

Send Test Push Notifications to APNS

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To run a quick test of your push notification setup for Apple Push Notification Service (APNS), use the Send Test Notification page.

1. In Setup, enter *Apps* in the `Quick Find` box, then select **Apps**.
2. Click the name of your connected app.
3. Click **Send test notification** next to Supported Push Platform. This link appears only if you've configured your connected app to support mobile push notifications.
4. Enter a connection token string in the **Recipient** field, OR search for a recipient by clicking Search , and then select one of the search results. By default, the Search results list displays the five devices most recently registered for your connected app.
   a. To find other devices, enter a user name in the Search text box.
   b. Click **Go** to generate a list of all devices currently registered under that user name.
5. Optionally, for Alert, enter an alert message or dictionary per Apple's specifications.
6. For Badge, enter a badge number or *0* for no badge.
7. For Sound, enter the name of a sound file in the application bundle, or enter *default* to use the system default alert sound.
8. Optionally, to use a custom payload, enter your payload's JSON value in the Custom Payload field.

9. Click **Send** to send the test push notification, or click **Clear** to reset the form.

Send Test Push Notifications to FCM for Android

USER PERMISSIONS	
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Connected Apps can be installed in: **All** Editions

To run a quick test of your push notification setup for Firebase Cloud Messaging (FCM) for Android, use the Test Push Notifications page.

1. In Setup, enter *Apps* in the `Quick Find` box, then select **Apps**.
2. Click the name of your connected app.
3. Click **Send test notification** next to Supported Push Platform. This link appears only if you've configured your connected app to support mobile push notifications.
4. Enter a connection token string in the **Recipient** field, OR search for a recipient by clicking Search  , and then select one of the search results. By default, the Search results list displays the five devices most recently registered for your connected app.
   a. To find other devices, enter a user name in the Search text box.
   b. Click **Go** to generate a list of all devices currently registered under that user name.
5. For Payload, enter a JSON value that contains your message.
6. To send the push notification to the FCM server only, select **Dry Run**.
7. Click **Send** to send the test push notification, or click **Clear** to reset the form.

Check a User's Mobile Push Registrations

From a User page in your organization, an administrator can easily check which of the user's devices are currently registered for push notifications. Checking the registrations may help you troubleshoot push notification failures.

1. In Setup, enter *Users* in the `Quick Find` box, then select **Users**.
2. Select a user's name from the Full Name column.
3. Under User Detail, click **View** next to Mobile Push Registrations.

Note: If a device you expected doesn't appear in the list, it doesn't necessarily mean that the device isn't properly configured. Mobile push registrations are volatile and depend on the device state as well as the mobile app state.

Step 3. Configure Your Mobile SDK App

In your Mobile SDK app, implement push notification protocols required by Salesforce and the device OS provider.

Follow the instructions for your target mobile platform (Android, iOS, or hybrid).

IN THIS SECTION:

Enable Push Notifications in a Salesforce Mobile SDK Android App

1. Add an entry for `androidPushNotificationClientId`.
   a. In `res/values/bootconfig.xml` (for native apps):

   ```
   <string name="androidPushNotificationClientId">1234567890</string>
   ```

   b. In `assets/www/bootconfig.json` (for hybrid apps):

   ```
   "androidPushNotificationClientId": "1234567890"
   ```

   This example value represents the project number of the Google project that is authorized to send push notifications to Android devices.

   Note: Behind the scenes, Mobile SDK automatically reads this value and uses it to register the device against the Salesforce connected app. Each time the user re-opens the app, Mobile SDK automatically renews the registration. This validation allows Salesforce to send notifications to the connected app.

   A device becomes unregistered if:

   - The app goes unused for an extended period of time

     OR

   - The user logs out of the app

2. Create a class in your app that implements `PushNotificationInterface`. `PushNotificationInterface` is a Mobile SDK Android interface for handling push notifications. `PushNotificationInterface` has a single method, `onPushMessageReceived(Bundle message)`.

```
public interface PushNotificationInterface {
    public void onPushMessageReceived(Bundle message);
}
```

   In this method you implement your custom functionality for displaying, or otherwise disposing of, push notifications.

3. In the `onCreate()` method of your `Application` subclass, call the `SalesforceSDKManager.setPushNotificationReceiver()` method, passing in your implementation of `PushNotificationInterface`. Call this method immediately after the `SalesforceSDKManager.initNative()` call.

```
@Override
public void onCreate() {
    super.onCreate();
    SalesforceSDKManager.initNative(getApplicationContext(),
        new KeyImpl(), MainActivity.class);
    SalesforceSDKManager.getInstance().
        setPushNotificationReceiver(myPushNotificationInterface);
 }
```

Enable Push Notifications in a Salesforce Mobile SDK iOS App

Salesforce Mobile SDK for iOS provides the `SFPushNotificationManager` class to handle push registration. To use it, import `<SalesforceSDKCore/SFPushNotificationManager>`. The `SFPushNotificationManager` class is available as a runtime singleton:

```
[SFPushNotificationManager sharedInstance]
```

This class implements four registration methods:

```
- (void)registerForRemoteNotifications;
- (void)didRegisterForRemoteNotificationsWithDeviceToken:
    (NSData*)deviceTokenData;
- (BOOL)registerForSalesforceNotifications; // for internal use
- (BOOL)unregisterSalesforceNotifications; // for internal use
```

Mobile SDK calls `registerForSalesforceNotifications` after login and `unregisterSalesforceNotifications` at logout. You call the other two methods from your `AppDelegate` class.

Mobile SDK 8.2 updates the push notification implementation to use the iOS `UNUserNotificationCenter` class. This class authorizes the calling app to receive push notifications from APNS. Mobile SDK iOS template apps request authorization for alerts, sounds, and badges.

To decode encrypted notifications, you extend the iOS `UNNotificationServiceExtension` class. Mobile SDK provides a special app template that includes the boilerplate extension code for you to copy. See Handle Notification Encryption in Salesforce Mobile SDK Apps.

1. In your `AppDelegate` class, create an instance method named `- (void) registerForRemotePushNotifications`.

a. In this method, request authorization to receive push notifications.

```
- (void)registerForRemotePushNotifications {
    [[UNUserNotificationCenter currentNotificationCenter]
        requestAuthorizationWithOptions:(UNAuthorizationOptionSound |
                                         UNAuthorizationOptionAlert |
                                         UNAuthorizationOptionBadge)
                      completionHandler:^(BOOL granted,
                                          NSError * _Nullable error) {
        if (granted) {

        } else {

        }

        if (error) {

        }
    }];
}
```

b. If authorization is granted, call the `SFPushNotificationManager registerForRemoteNotifications` method. If authorization isn't granted or the operation returned an error, log appropriate error messages.

```
- (void)registerForRemotePushNotifications {
    [[UNUserNotificationCenter currentNotificationCenter]
        requestAuthorizationWithOptions:(UNAuthorizationOptionSound |
                                         UNAuthorizationOptionAlert |
                                         UNAuthorizationOptionBadge)
                      completionHandler:^(BOOL granted,
                                          NSError * _Nullable error) {
        if (granted) {
            // All good!
            dispatch_async(dispatch_get_main_queue(), ^{
               [[SFPushNotificationManager sharedInstance]
                   registerForRemoteNotifications];
            });
        } else {
            // Authorization not granted
            [SFLogger d:[self class]
                format:@"Push notification authorization denied"];
        }

        if (error) {
            // Operation failed with error message
            [SFLogger e:[self class]
                 format:@"Push notification authorization error: %@",
                        error];
        }
    }];
}
```

2. Call your `registerForRemotePushNotifications` in the `application:didFinishLaunchingWithOptions:` method.

```
- (BOOL)application:(UIApplication *)application
    didFinishLaunchingWithOptions:(NSDictionary *)launchOptions
{
    self.window = [[UIWindow alloc]
        initWithFrame:[UIScreen mainScreen].bounds];
    [self initializeAppViewState];

    [self registerForRemotePushNotifications];

    [[SFAuthenticationManager sharedManager]
        loginWithCompletion:self.initialLoginSuccessBlock
                    failure:self.initialLoginFailureBlock];

    return YES;
}
```

If registration succeeds, Apple passes a device token to the `application:didRegisterForRemoteNotificationsWithDeviceToken:` method of your `AppDelegate` class.

3. In the `application:didRegisterForRemoteNotificationsWithDeviceToken:` method, register the device token from Apple with Mobile SDK's push notification manager.

   a. Call the `SFPushNotificationManager didRegisterForRemoteNotificationsWithDeviceToken:` method.

```
- (void)application:(UIApplication*)application
    didRegisterForRemoteNotificationsWithDeviceToken:
        (NSData*)deviceToken
{
    [[SFPushNotificationManager sharedInstance]
        didRegisterForRemoteNotificationsWithDeviceToken:deviceToken];


}
```

   b. If the current user's access token exists, call the `SFPushNotificationManager registerSalesforceNotificationsWithCompletionBlock:failBlock:` method.

```
- (void)application:(UIApplication*)application
    didRegisterForRemoteNotificationsWithDeviceToken:
        (NSData*)deviceToken
{
    [[SFPushNotificationManager sharedInstance]
        didRegisterForRemoteNotificationsWithDeviceToken:deviceToken];

    if ([SFUserAccountManager sharedInstance].
            currentUser.credentials.accessToken != nil) {
        [[SFPushNotificationManager sharedInstance]
            registerSalesforceNotificationsWithCompletionBlock:nil
                                                     failBlock:nil];
```

```
    }
}
```

4. To log an error if registration with Apple fails, implement the `application:didFailToRegisterForRemoteNotificationsWithError:` method.

```
- (void)application:(UIApplication*)application
    didFailToRegisterForRemoteNotificationsWithError:
        (NSError*)error
{
    // Example of an implementation
    [SFLogger e:[self class] format:@"Push notification authorization error: %@", error];
}
```

Enable Push Notifications in a Salesforce Mobile SDK Hybrid App

1. (Android only) If your target platform is Android:
   a. Add an entry for `androidPushNotificationClientId`. In `assets/www/bootconfig.json`:

```
"androidPushNotificationClientId": "33333344444"
```

   This value is the project number of the Google project that is authorized to send push notifications to an Android device.

2. In your callback for `cordova.require("com.salesforce.plugin.oauth").getAuthCredentials()`, add the following code:

```
cordova.require("com.salesforce.util.push").registerPushNotificationHandler(
    function(message) {
        // add code to handle notifications
    },
    function(error) {
        // add code to handle errors
    }
);
```

Example: This code demonstrates how you might handle messages. The server delivers the payload in `message["payload"]`.

```
function(message) {
    var payload = message["payload"];
    if (message["foreground"]) {
        // Notification is received while the app is in
        // the foreground
        // Do something appropriate with payload
    }
    if (!message["foreground"]) {
        // Notification was received while the app was in
        // the background, and the notification was clicked,
        // bringing the app to the foreground
        // Do something appropriate with payload
    }
}
```

Handle Notification Encryption in Salesforce Mobile SDK Apps

Mobile notifications travel from Salesforce, through third-party messaging services to mobile carriers, then on to mobile devices. Such an indirect path only increases the opportunities for malicious attacks. To guard against snooping or hacking, Salesforce encrypts Notification Builder notifications. Your app is responsible for decrypting these notifications.

Setting up encryption for notifications requires no configuration on the server. For client-side decryption, Salesforce Mobile SDK does most of the work for you. Mobile SDK negotiates the encryption policy with the Salesforce server and internally handles the exchange of public and private keys.

Your tasks for notification decryption on client apps depends on the mobile operating system.

iOS
Apps that are registered for Salesforce notifications must extend the `UNNotificationServiceExtension` class. A specialized Mobile SDK template app provides a boilerplate extension that you can bring into your iOS app, provided you're using Mobile SDK 8.2 or later. Earlier versions of Mobile SDK do not fully support notification encryption.

Android
Mobile SDK for Android handles decryption internally and requires no client-side code changes.

Implementing a Decryption Extension (Swift)

In Mobile SDK 8.2 and later, the forceios iOSNativeSwiftTemplate app requests notification authorization through the iOS `UNUserNotificationCenter` object. A specialized version of `iOSNativeSwiftTemplate`, iOSNativeSwiftEncryptedNotificationTemplate, extends the `UNNotificationServiceExtension` iOS class to handle notification decryption. This extension class, `NotificationService`, provides boilerplate decryption code that Mobile SDK apps can use without changes. To support encrypted notifications, you must be using Mobile SDK 8.2 or later, and your app must include this extension.

To create a Swift project that supports Notification Builder encrypted notifications, you can use the `iOSNativeSwiftEncryptedNotificationTemplate` template with forceios. Even if you're updating an existing Mobile SDK project, it's easiest to start fresh with a new forceios template project. If you'd rather update a Swift project manually, skip to "Example: Add Push Registration Manually (Swift)".

1. Install the latest forceios version from node.js:

```
[sudo] npm install -g forceios
```

2. Call the forceios `createWithTemplate` command:

```
forceios createWithTemplate
```

3. At the first prompt, enter *`iOSNativeSwiftEncryptedNotificationTemplate`*:

```
forceios createWithTemplate
Enter URI of repo containing template application or a Mobile SDK template name:
    iOSNativeSwiftEncryptedNotificationTemplate
```

4. In the remaining prompts, enter your company and project information. If your information is accepted, forceios creates a project that is ready for encrypted notifications.
5. If you're updating an older Mobile SDK project, copy your app-specific resources from your old project into the new project.

See Also

- UNNotificationServiceExtension at developer.apple.com

Build Your Own In-App Notification Feature

If you use the Salesforce mobile app, you're familiar with the Salesforce Bell. The Bell provides an in-app notification tray that lists the current user's most recent notifications. With Salesforce Notification APIs, you can design and build your own tray.

Queries calculate results from stored Notification Builder notifications. Salesforce provides REST APIs for the following Notification queries.

Notification
Get a specific notification for the context user.

Notifications
Get notifications for the context user.

Notifications Status
Get the "read" and "seen" properties a range of notifications.

Notification Update
Update the "read" and "seen" properties of a specific notification.

Notifications Update
Update the "read" and "seen" properties of a range of notifications.

For example, using these APIs, an app can

- Display a list of notifications (Notifications)
- When the customer taps a list entry, display the details of a single notification (Notification)
- Set the state of a widget that indicates whether a notification has been read or seen (Notification)
- Report how many notifications the customer hasn't read or seen (Notifications Status)
- Update the "read" or "seen" properties on one or more notifications after the customer visits your tray (Notification Update, Notifications Update)

Custom In-App Notification Tray Template App

If you're looking for a head start in Swift, Mobile SDK provides an example of a custom notifications tray in the MobileSyncExplorerSwift template app. You can create your own app based on this template with the `forceios createwithtemplate` CLI command:

1. Install the latest forceios version from `node.js`:

```
[sudo] npm install -g forceios
```

2. Call the forceios `createWithTemplate` command:

```
forceios createWithTemplate
```

3. At the first prompt, enter *`MobileSyncExplorerSwift`*:

```
forceios createWithTemplate
Enter URI of repo containing template application or a Mobile SDK template name:
    MobileSyncExplorerSwift
```

4. In the remaining prompts, enter your company and project information. If your information is accepted, forceios creates a project with a notifications tray that you can customize.
5. If you're updating an older Mobile SDK project, copy your app-specific resources from your old project into the new project.

See the Reference section for more information on Notification APIs.

Mobile SDK iOS Wrappers for Notification APIs

On iOS, Mobile SDK defines convenience methods for Notification APIs in the following classes:

Swift

```
RestClient
```

Objective-C

```
SFRestApi
```

The following methods are currently available for native apps only.

Notification

Get a notification.

Delegate Method

Swift

```
RestClient.shared.request(forNotification:apiVersion:)
```

Objective-C

```
- (SFRestRequest *)requestForNotification:(NSString *)notificationId apiVersion:(NSString
 *)apiVersion;
```

Block Method

Not available.

Notifications Status

Get the status of a range of notifications, including unread and unseen count.

Delegate Method

Swift

```
RestClient.shared.request(forNotificationsStatus:)
```

Objective-C

```
- (SFRestRequest *)requestForNotificationsStatus:(NSString *)apiVersion;
```

Block Method

Not available.

Notifications

Get the given number (maximum 20) of archived Notification Builder notifications based on the given "before" or "after" date. In Mobile SDK, use the Swift `FetchNotificationsRequestBuilder` object or the Objective-C `SFSDKFetchNotificationsRequestBuilder` to create GET requests for notifications.

Delegate Method

Swift

```
let builder = FetchNotificationsRequestBuilder.init()
builder.setSize(10)
builder.setBefore(Date.init())
let request = builder.buildFetchNotificationsRequest(SFRestDefaultAPIVersion)
```

Objective-C

```
SFSDKFetchNotificationsRequestBuilder *builder =
    [[SFSDKFetchNotificationsRequestBuilder alloc] init];
[builder setBefore: [NSDate date]];
[builder setSize:10];
SFRestRequest *fetchRequest =
    [builder buildFetchNotificationsRequest:kSFRestDefaultAPIVersion];
```

Block Method

Not available.

Notifications Update

Update the "read" and "seen" statuses of a given set of Notification Builder notifications. In Mobile SDK, use the Swift `UpdateNotificationsRequestBuilder` object or the Objective-C `SFSDKUpdateNotificationsRequestBuilder` object to create update requests.

To update a single notification, set the `notificationId` property. To update a range of notifications, set either the `notificationIds` or the `before` property. These properties—`notificationId`, `notificationIds`, and `before`—are mutually exclusive.

Delegate Method

Swift

```
let builder = UpdateNotificationsRequestBuilder.init()
builder.setBefore(Date.init())
builder.setRead(true)
builder.setSeen(true)
let request = builder.buildUpdateNotificationsRequest(SFRestDefaultAPIVersion)
```

Objective-C

```
SFSDKUpdateNotificationsRequestBuilder *builder =
    [[SFSDKUpdateNotificationsRequestBuilder alloc] init];
[builder setRead:true];
[builder setSeen:true];
[builder setBefore: [NSDate date]];
SFRestRequest *updateRequest = [builder
buildUpdateNotificationsRequest:kSFRestDefaultAPIVersion];
```

Block Method

Not available.

Mobile SDK Android Wrappers for Notification APIs

On Android, the `RestRequest` class defines the following convenience wrappers for Notification APIs.

Notification

Get a notification.

```
public static RestRequest getRequestForNotification(String apiVersion,
    String notificationId)
```

Notification Update

Update the "read" and "seen" statuses of a given Notification Builder notification.

```
public static RestRequest getRequestForNotificationUpdate(String apiVersion,
    String notificationId, Boolean read, Boolean seen)
```

Notifications

Get the given number (maximum 20) of archived Notification Builder notifications based on the given "before" or "after" date.

```
public static RestRequest getRequestForNotifications(String apiVersion,
    Integer size, Date before, Date after)
```

Notifications Status

Get the status of a range of notifications, including unread and unseen count.

```
public static RestRequest getRequestForNotificationsStatus(String apiVersion)
```

Notifications Update

Update the "read" and "seen" statuses of a given set of Notification Builder notifications.

```
* public static RestRequest getRequestForNotificationsUpdate(String apiVersion,
    List<String> notificationIds, Date before, Boolean read, Boolean seen)
```

Step 4. Packaging Components for Customer Organizations

To distribute the Apex triggers and the connected app to customers, partners can create a managed package.

When customers install your managed package, they will be able to send push notifications to the connected app from their organizations when certain events occur on Salesforce records, such as updating records.

Note: Customers who install a managed package containing a connected app provided by a partner can't write their own Apex triggers to send push notifications to the connected app. This is to safeguard the partner's registration with the mobile OS vendor from abuse.

SENDING MOBILE NOTIFICATIONS

To send mobile notifications, Salesforce offers several options: Apex, REST API, and, in some cases, declarative feature-based tools. The type of notification, the delivery channel, and your skill comfort levels guide your choice.

Send Apex push notifications with the `Messaging.PushNotification` methods in Apex triggers, or through the `PushNotifications` API.

You can send custom notifications through the `customNotificationAction` API, Process Builder, or Flow.

See Also

- Send Mobile Push Notifications
- Considerations for Notification Builder
- Send Custom Notifications with Notification Builder Platform
- Other Ways to Send a Custom Notification

Using Apex Triggers to Send Push Notifications

After registering with the mobile OS vendor for push notification service and creating a connected app, you can send push notifications to a mobile client app using Apex triggers.

Push notification triggers use methods in the Apex `Messaging.PushNotification` and `Messaging.PushNotificationPayload` classes. The connected app in the Salesforce organization represents the mobile client app that will receive the notifications.

Important: To send push notifications to a connected app, either of the following conditions must be met:

- Apex triggers are added in the *same organization* in which the connected app is created.
- Apex triggers are installed as part of a partner-provided managed package, along with the connected app.

Sample Apex Trigger

This sample Apex trigger sends push notifications to the connected app named *`Test_App`*, which corresponds to a mobile app on iOS mobile clients. The trigger fires after cases have been updated and sends the push notification to two users: the case owner and the user who last modified the case.

```
trigger caseAlert on Case (after update) {

    for(Case cs : Trigger.New)
    {
        // Instantiating a notification
        Messaging.PushNotification msg =
            new Messaging.PushNotification();

        // Assembling the necessary payload parameters for Apple.
        // Apple params are:
```

```
        // (<alert text>,<alert sound>,<badge count>,
        // <free-form data>)
        // This example doesn't use badge count or free-form data.
        // The number of notifications that haven't been acted
        // upon by the intended recipient is best calculated
        // at the time of the push. This timing helps
        // ensure accuracy across multiple target devices.
        Map<String, Object> payload =
            Messaging.PushNotificationPayload.apple(
                'Case ' + cs.CaseNumber + ' status changed to: '
                + cs.Status, '', null, null);

        // Adding the assembled payload to the notification
        msg.setPayload(payload);

        // Getting recipient users
        String userId1 = cs.OwnerId;
        String userId2 = cs.LastModifiedById;

        // Adding recipient users to list
        Set<String> users = new Set<String>();
        users.add(userId1);
        users.add(userId2);

        // Sending the notification to the specified app and users.
        // Here we specify the API name of the connected app.
        msg.send('Test_App', users);
    }
}
```

Sample Android Payload

The trigger sample uses `Messaging.PushNotificationPayload` to create a payload for an iOS notification. Unlike iOS, Android doesn't have special attributes or requirements for the payload; it just needs to be in JSON format. In Apex, you create the Android payload as a MAP<String,ANY> object. The `Messaging.PushNotification` class handles conversion to JSON. Here is a sample Android payload.

```
Map<String, Object> androidPayload = new Map<String, Object>();
androidPayload.put('number', 1);
androidPayload.put('name', 'test');
```

PushNotification Class

`PushNotification` is used to configure push notifications and send them from an Apex trigger.

Namespace

Messaging

Example

This sample Apex trigger sends push notifications to the connected app named *Test_App*, which corresponds to a mobile app on iOS mobile clients. The trigger fires after cases have been updated and sends the push notification to two users: the case owner and the user who last modified the case.

```
trigger caseAlert on Case (after update) {

    for(Case cs : Trigger.New)
    {
        // Instantiating a notification
        Messaging.PushNotification msg =
            new Messaging.PushNotification();

        // Assembling the necessary payload parameters for Apple.
        // Apple params are:
        // (<alert text>,<alert sound>,<badge count>,
        // <free-form data>)
        // This example doesn't use badge count or free-form data.
        // The number of notifications that haven't been acted
        // upon by the intended recipient is best calculated
        // at the time of the push. This timing helps
        // ensure accuracy across multiple target devices.
        Map<String, Object> payload =
            Messaging.PushNotificationPayload.apple(
                'Case ' + cs.CaseNumber + ' status changed to: '
                + cs.Status, '', null, null);

        // Adding the assembled payload to the notification
        msg.setPayload(payload);

        // Getting recipient users
        String userId1 = cs.OwnerId;
        String userId2 = cs.LastModifiedById;

        // Adding recipient users to list
        Set<String> users = new Set<String>();
        users.add(userId1);
        users.add(userId2);

        // Sending the notification to the specified app and users.
        // Here we specify the API name of the connected app.
        msg.send('Test_App', users);
    }
}
```

PushNotification Constructors

The following are the constructors for `PushNotification`.

`PushNotification()`

Creates a new instance of the `Messaging.PushNotification` class.

Signature

```
public PushNotification()
```

`PushNotification(payload)`

Creates a new instance of the `Messaging.PushNotification` class using the specified payload parameters as key-value pairs. When you use this constructor, you don't need to call `setPayload` to set the payload.

Signature

```
public PushNotification(Map<String,Object> payload)
```

Parameters

payload
Type:Map<String, Object>

The payload, expressed as a map of key-value pairs.

PushNotification Methods

The following are the methods for `PushNotification`. All are global methods.

`send(application, users)`

Sends a push notification message to the specified users.

Signature

```
public void send(String application, Set<String> users)
```

Parameters

application
Type: String

The connected app API name. This corresponds to the mobile client app the notification should be sent to.

users
Type: Set

A set of user IDs that correspond to the users the notification should be sent to.

Example

See the Push Notification Example.

`setPayload(payload)`

Sets the payload of the push notification message.

Signature

```
public void setPayload(Map<String,Object> payload)
```

Parameters

payload
Type: Map<String, Object>

The payload, expressed as a map of key-value pairs.

Payload parameters can be different for each mobile OS vendor. For more information on Apple's payload parameters, search for "Apple Push Notification Service" at https://developer.apple.com/library/mac/documentation/.

To create the payload for an Apple device, see the PushNotificationPayload Class.

Example

See the Push Notification Example.

`setTtl(ttl)`

Reserved for future use.

Signature

```
public void setTtl(Integer ttl)
```

Parameters

ttl
Type: Integer

Reserved for future use.

Push Notifications Resource

Send a mobile push notification to connected apps on users' devices. This resource is only accessible when the session is established with a connected app that is developed in the same organization or installed in the same package as the recipient's connected app.

Resource

```
/connect/notifications/push
```

Available version
31.0

Requires Chatter
No

HTTP methods
POST

Request body for POST

Root XML tag
`<pushNotification>`

JSON example

```
{    "appName" : "TestApp",
     "namespace" : "abc",
     "userIds" : ["005x00000013dPK", "005x00000013dPL"],
     "payload" : "{'aps':{'alert':'test', 'badge':0, 'sound':'default'}}"
}
```

Properties

Name	Type	Description	Required or Optional	Available Version
`appName`	String	The API name of the connected app that the push notification is sent to.	Required	31.0
`namespace`	String	The namespace of the connected app that the push notification is sent to.	Required if the namespace is set	31.0
`payload`	String	The push notification payload in JSON format.	Required	31.0
`userIds`	String[]	The push notification recipient user ids.	Required	31.0

Request parameters for POST

Parameter Name	Type	Description	Required or Optional	Available Version
`appName`	String	The API name of the connected app that the push notification is sent to.	Required	31.0
`namespace`	String	The namespace of the connected app that the push notification is sent to.	Required if the namespace is set	31.0
`payload`	String	The push notification payload in JSON format.	Required	31.0
`userIds`	String[]	The push notification recipient user ids.	Required	31.0

Custom Notification Actions

Send custom notifications to recipients via desktop or mobile channels.

Before you send a custom notification, you must first create a notification type.

Important: In orgs created in Winter '21 or later, the Send Custom Notifications user permission is required to trigger the Send Custom Notification action in flows that run in user context, REST API calls, and Apex callouts.

The Send Custom Notifications user permission isn't required to trigger the Send Custom Notification action in processes or flows that run in system context.

This object is available in API version 46.0 and later.

Supported REST HTTP Methods

URI

`/v`***`XX.X`***`/actions/standard/customNotificationAction`

Formats

JSON, XML

HTTP Methods

GET, HEAD, POST

Authentication

`Authorization: Bearer` ***`token`***

Inputs

Input	Details
`customNotifTypeId`	**Type** reference **Description** Required. The ID of the Custom Notification Type being used for the notification.
`recipientIds`	**Type** reference **Description** Required. The ID of the recipient or recipient type of the notification. Valid recipient or recipient type values are: • `UserId` — The notification will be sent to this user, if this user is active. • `AccountId` — The notification will be sent to all active users who are members of this account's Account Team. Note: This recipient type is valid if account teams are enabled for your org. • `OpportunityId` — The notification will be sent to all active users who are members of this opportunity's Opportunity Team. Note: This recipient type is valid if team selling is enabled for your org. • `GroupId` — The notification will be sent to all active users who are members of this group. • `QueueId` — The notification will be sent to all active users who are members of this queue. Values can be combined in a list up to the maximum of 500 values.
`senderId`	**Type** reference **Description** Optional. The User ID of the sender of the notification.

Input	Details
`title`	**Type** string **Description** Required. The title of the notification, as it will be seen by recipients. Maximum characters: 250. Note: The content of mobile push notifications depends on the Display full content push notifications setting.
`body`	**Type** string **Description** Required. The body of the notification, as it will be seen by recipients. Maximum characters: 750. Note: The content of mobile push notifications depends on the Display full content push notifications setting.
`targetId`	**Type** reference **Description** Optional. The Record ID for the target record of the notification. You must specify either a `targetID` or a `targetPageRef`.
`targetPageRef`	**Type** string **Description** Optional. The `PageReference` for the navigation target of the notification. You must specify either a `targetID` or a `targetPageRef`.

Usage

GET

The following example shows how to get information about the custom notification action type:

```
curl --include --request GET \
--header "Authorization: Authorization: Bearer 00DR...xyz" \
--header "Content-Type: application/json" \
"https://instance.salesforce.com/services/data/v46.0/actions/standard/customNotificationAction"
```

POST

The following example shows how to create a custom notification action:

```
curl --include --request POST \
--header "Authorization: Authorization: Bearer 00DR...xyz" \
--header "Content-Type: application/json" \
--data '{ "inputs" :
```

```
  [
  {
    "customNotifTypeId" : "0MLR0000000008eOAA",
    "recipientIds" : ["005R0000000LSqtIAG"],
    "title" : "Custom Notification",
    "body" : "This is a custom notification.",
    "targetId" : "001R0000003fSUDIA2"
  }
  ]
}' \
"https://instance.salesforce.com/services/data/v46.0/actions/standard/customNotificationAction"
```

The response is:

```
[
   {
      "actionName" : "customNotificationAction",
      "errors" : null,
      "isSuccess" : true,
      "outputValues" : {
         "SuccessMessage" : "Your custom notification is processed successfully."
      }
   }
]
```

USING THE CONNECT REST API PUSH NOTIFICATION RESOURCE (OPTIONAL)

If you prefer to send push notifications without looping through the Apex engine—in other words, if you just want to push a simple message from a connected app on one mobile device to another—use the Connect REST API push notification resource. This resource is useful for sending notifications of events that occur outside of Salesforce and can be handled entirely within the mobile connected app. You can use this resource in any type of custom app: a native Mobile SDK app, a hybrid Mobile SDK app, or an HTML5 app.

The Connect REST API resource establishes an HTTP session to send POST requests from the sending device to one or more receiving devices. This means that:

- The sending app and the receiving apps must either be developed in the same organization or be installed from the same package.
- Only the receiving apps are required to be registered for push notifications with Apple or Google.
- Only the receiving apps are required to implement the Salesforce Mobile SDK push notification protocols.
- Each app requires a connected app, but only the receiving connected apps must be configured for push notifications.

SEE ALSO:

Push Notifications Resource

PushNotificationPayload Class

Contains methods to create the notification message payload for an Apple device.

Namespace

Messaging

Usage

Apple has specific requirements for the notification payload. and this class has helper methods to create the payload. For more information on Apple's payload parameters, search for "Apple Push Notification Service" at https://developer.apple.com/library/mac/documentation/.

Example

See the Push Notification Example.

IN THIS SECTION:

PushNotificationPayload Methods

The following are the methods for `PushNotificationPayload`. All are global static methods.

IN THIS SECTION:

apple(alert, sound, badgeCount, userData)

Helper method that creates a valid Apple payload from the specified arguments.

Signature

```
public static Map<String,Object> apple(String alert, String sound, Integer badgeCount,
Map<String,Object> userData)
```

Parameters

alert
Type: String

Notification message to be sent to the mobile client.

sound
Type: String

Name of a sound file to be played as an alert. This sound file should be in the mobile application bundle.

badgeCount
Type: Integer

Number to display as the badge of the application icon.

userData
Type: Map<String, Object>

Map of key-value pairs that contains any additional data used to provide context for the notification. For example, it can contain IDs of the records that caused the notification to be sent. The mobile client app can use these IDs to display these records.

Return Value

Type:Map<String, Object>

Returns a formatted payload that includes all of the specified arguments.

Usage

To generate a valid payload, you must provide a value for at least one of the following parameters: `alert`, `sound`, `badgeCount`.

Example

See the Push Notification Example.

apple(alertBody, actionLocKey, locKey, locArgs, launchImage, sound, badgeCount, userData)

Helper method that creates a valid Apple payload from the specified arguments.

Signature

```
public static Map<String,Object> apple(String alertBody, String actionLocKey, String
locKey, String[] locArgs, String launchImage, String sound, Integer badgeCount,
Map<String,Object> userData)
```

Parameters

alertBody
Type: String

Text of the alert message.

actionLocKey
Type: String

If a value is specified for the *actionLocKey* argument, an alert with two buttons is displayed. The value is a key to get a localized string in a `Localizable.strings` file to use for the right button's title.

locKey
Type: String

Key to an alert-message string in a `Localizable.strings` file for the current localization.

locArgs
Type: List<String>

Variable string values to appear in place of the format specifiers in *locKey*.

launchImage
Type: String

File name of an image file in the application bundle.

sound
Type: String

Name of a sound file to be played as an alert. This sound file should be in the mobile application bundle.

badgeCount
Type: Integer

Number to display as the badge of the application icon.

userData
Type: Map<String, Object>

Map of key-value pairs that contains any additional data used to provide context for the notification. For example, it can contain IDs of the records that caused the notification to be sent. The mobile client app can use these IDs to display these records.

Return Value

Type: Map<String, Object>

Returns a formatted payload that includes all of the specified arguments.

Usage

To generate a valid payload, you must provide a value for at least one of the following parameters: `alert`, `sound`, `badgeCount`.

Apex Limits Functions for Push Notifications

Use the Apex limits functions for push notifications to get usage information.

`System.Limits` class:

`getLimitMobilePushApexCalls()`
Returns the total number of Apex calls that are allowed per transaction for mobile push notifications.

`getMobilePushApexCalls()`
Returns the number of Apex calls that have been used by mobile push notifications during the current metering interval.

Push Notification Limits

Push notification limits apply to test push notifications as well as to production notifications.

An org can send up to 20,000 iOS and 10,000 Android push notifications per hour (for example, 4:00 to 4:59 UTC).

Only *deliverable* notifications count toward this limit. For example, a notification is sent to 1,000 employees in your company, but 100 employees haven't installed the mobile app yet. Only the notifications sent to the 900 employees who have installed the mobile app count toward this limit.

Each test push notification that is generated through the Test Push Notification page is limited to a single recipient. Test push notifications count toward an org's hourly push notification limit.

When an org's hourly push notification limit is met, any additional notifications are still created for in-app display and retrieval via REST API.

Note:

- For Flow Builder notification limits, see https://help.salesforce.com/articleView?id=flow_ref_elements_actions_sendcustomnotification.htm
- The limits described here are for core Salesforce push notifications. They do not apply to Marketing Cloud MobilePush notifications. For further information on Marketing Cloud usage, see developer.salesforce.com/docs/atlas.en-us.mc-sdks.meta/mc-sdks/mobile-push-sdk.htm.

Error Messages for Push Notifications

If you get an error message while sending a push notification from the Send Test Notification page, check the following table for suggestions on how to fix the error.

Message	Suggested Resolution
Daily push rate limit has been exceeded for this connected application	Because the daily limit is nonnegotiable, no resolution is available.
Certificate is not accepted by Apple Push Notification service	Replace the certificate with a valid type.
Certificate is revoked	Supply valid certificate.
Certificate expired	Renew certificate.
Certificate not valid yet	Retry later.
Invalid certificate or password	Replace the certificate with a valid type.
Invalid recipient or payload	Check your input for errors.
Payload exceeds maximum size	Reduce size of payload.
Unable to load push notifications settings	Confirm that settings are present on connected app.
Recipient field contains invalid device token	Provide valid device token.
Invalid device token length	Token was entered incorrectly or is corrupt. Re-enter token.
Error while sending notification. Confirm certificate is for the correct Apple environment.	Confirm that correct certificate is being used (for example, sandbox versus production).

Message	Suggested Resolution
Apple Push Notification service is unavailable.	Retry later.
Unable to connect to Apple Push Notification service	Retry later.
Unable to connect to Salesforce proxy. Contact Salesforce support if issue persists.	Retry later.
Request blocked by Salesforce proxy. Contact Salesforce support if issue persists.	Retry later.
Apple Push Notification service returned unknown error	Contact Apple or retry later.
Badge must be a number	Re-enter the badge value as an integer.
Payload must be in a valid JSON format	Format payload correctly.
You must enter a value for at least one of the following fields: Alert, Badge, Sound, or Custom Payload	Enter a valid value for one of the fields.
Recipient is required	Provide device token.
Firebase Cloud Messaging authentication error	Consult the FCM documentation at developer.android.com. Possible causes: • Authorization header is missing or contains invalid syntax. • Invalid project number was sent as key. • Key is valid, but FCM service is disabled. • Request originated from a server that is not white-listed in the server key IP addresses.
Internal error in the Firebase Cloud Messaging server, or the server is temporarily unavailable	Retry later.
Registration ID in the Recipient field is formatted incorrectly	Verify that mobile app is providing valid registration ID, or manually enter valid registration ID.
Payload exceeds maximum size	Reduce size of payload.
Recipient field contains registration ID that is not valid for the connected application's API server key	Provide correct server key for the app.
Recipient is required	Select recipient or provide registration ID.
Recipient field contains invalid registration ID	Update recipient's device registration ID.
FCM server returned an unexpected error. Please contact the SFDC support team.	Contact salesforce.com.
An unexpected error occurred. Please contact the SFDC support team.	Contact salesforce.com.

Debug Log Events

The mobile push notification service logs events that are useful to understand when you are monitoring an Apex debug log.

Events

The following events are supported:

- `PUSH_NOTIFICATION_INVALID_APP`
- `PUSH_NOTIFICATION_INVALID_CERTIFICATE`
- `PUSH_NOTIFICATION_INVALID_NOTIFICATION`
- `PUSH_NOTIFICATION_NO_DEVICES`
- `PUSH_NOTIFICATION_NOT_ENABLED`
- `PUSH_NOTIFICATION_SENT`

For more information on these events, log levels and categories, and how to use the Developer Console or monitor a debug log, see the *Apex Code Developer's Guide*.

Notifications Resources

Get or update notifications. Get the status of notifications.

Available resources are:

Resource	Description
`/connect/notifications`	Get notifications for the context user. Mark notifications as read, unread, seen, or unseen.
`/connect/notifications/notificationId`	Get a notification for the context user. Mark a notification as read, unread, seen, or unseen.
`/connect/notifications/status`	Get the status of notifications for the context user.

IN THIS SECTION:

Notification
Get a notification for the context user. Mark a notification as read, unread, seen, or unseen.

Notifications
Get notifications for the context user. Mark notifications as read, unread, seen, or unseen.

Notifications Status
Get the status of notifications for the context user.

Notification App Setting
Get, set, and reset a notification app setting for the org.

Notification App Settings
Get notification app settings for the org.

Notification Setting

Get, set, and reset a notification setting for the org.

Notification Settings

Get notification settings for the org.

CustomNotificationType

Stores information about custom notification types. This object is available in API version 46.0 and later.

Notification

Get a notification for the context user. Mark a notification as read, unread, seen, or unseen.

Resource

`/connect/notifications/notificationId`

Available since version

49.0

Requires Chatter

No

HTTP methods

GET, PATCH

Request parameters for GET

Parameter	Return Type	Description	Required or Optional	Available Version
`trimMessages`	Boolean	Specifies whether the content of a notification is trimmed (`true`) or displayed in full (`false`). If `true`, the title of a notification displays up to 120 characters and the body displays up to 320 characters. If `false`, the title of a notification displays up to 250 characters and the body displays up to 750 characters. If unspecified, the default is `true`.	Optional	50.0

Request body for PATCH

Root XML tag

```
<notification>
```

JSON example

```
{ "read" : "true" }
```

Properties

Name	Type	Description	Required or Optional	Available Version
`read`	Boolean	Marks a notification as read (`true`) or unread (`false`). If a notification is marked as read, it is also marked as seen. If you set `read` to `true` and `seen` to `false`, you get an error.	Required if `seen` isn't specified	49.0
`seen`	Boolean	Marks a notification as seen (`true`) or unseen (`false`).	Required if `read` isn't specified	49.0

Request parameters for PATCH

Parameter	Type	Description	Required or Optional	Available Version
`read`	Boolean	Marks a notification as read (`true`) or unread (`false`).	Required if `seen` isn't specified	49.0
`seen`	Boolean	Marks a notification as seen (`true`) or unseen (`false`).	Required if `read` isn't specified	49.0

Response body for GET and PATCH

Notification

IN THIS SECTION:

Notification

Notification.

Property	Type	Description	Filter Group and Version	Available Version
`additionalData`	String	Reserved for future use.	Small, 49.0	49.0
`communityId`	String	ID of the Experience Cloud site for the notification.	Small, 49.0	49.0

Property	Type	Description	Filter Group and Version	Available Version
`communityName`	String	Name of the Experience Cloud site for the notification.	Small, 49.0	49.0
`count`	Integer	Total number of events for the notification. For custom notifications that are exposed to third-party developers, the value is `1`.	Small, 49.0	49.0
`id`	String	ID of the notification.	Small, 49.0	49.0
`image`	String	Url to the image associated with the notification.	Medium, 49.0	49.0
`lastModified`	String	Date and time when the notification was last modified.	Small, 49.0	49.0
`messageBody`	String	Body of the message for the notification.	Small, 49.0	49.0
`messageTitle`	String	Title of the message for the notification.	Small, 49.0	49.0
`mostRecent ActivityDate`	String	Date and time of the most recent activity for the notification.	Small, 49.0	49.0
`organization Id`	String	ID of the notification recipient's org.	Small, 49.0	49.0
`read`	Boolean	Specifies whether the notification is marked read (`true`) or unread (`false`).	Small, 49.0	49.0
`recipientId`	String	ID of the recipient of the notification.	Small, 49.0	49.0
`seen`	Boolean	Specifies whether the notification is marked seen (`true`) or unseen (`false`).	Small, 49.0	49.0
`target`	String	ID of the record associated with the notification.	Medium, 49.0	49.0
`targetPageRef`	String	Page reference for notification target.	Medium, 50.0	50.0
`type`	String	Type of notification. For custom notifications, this is the custom notification type ID.	Small, 49.0	49.0
`url`	String	URL for the notification.	Small, 49.0	49.0

Notification Collection

Collection of notifications.

Property Name	Type	Description	Filter Group and Version	Available Version
`notifications`	Notification[]	Collection of notifications.	Small, 49.0	49.0

Notification Status

Status of notifications for the context user.

Property Name	Type	Description	Filter Group and Version	Available Version
`lastActivity`	String	Date and time of latest activity date for any notifications or, if none, the current date and time.	Small, 49.0	49.0
`oldestUnread`	String	Date and time of oldest unread notification or, if none, the current date and time.	Small, 49.0	49.0
`oldestUnseen`	String	Date and time of oldest unseen notification or, if none, the current date and time.	Small, 49.0	49.0
`unreadCount`	Integer	Count of unread notifications.	Small, 49.0	49.0
`unseenCount`	Integer	Count of unseen notifications.	Small, 49.0	49.0

Notifications

Get notifications for the context user. Mark notifications as read, unread, seen, or unseen.

When the context user makes a GET request, the API returns the context user's notifications. The API uses the context of the requesting connected app and returns notifications for the appropriate types.

If a connected app makes a GET request, the API returns only custom notifications for the types that the connected app subscribes to with org-level settings applied. For example, if an admin disabled a notification type for the app, the API doesn't return notifications for that type.

If a third party (not a connected app) makes a GET request, the API returns only custom notifications for the types that are enabled for desktop.

Resource
`/connect/notifications`

Available since version
49.0

Requires Chatter
No

HTTP methods
GET, PATCH

Request parameters for GET

Parameter	Return Type	Description	Required or Optional	Available Version
`after`	String	Notifications occurring after this ISO 8601 formatted date string to mark as read, unread, seen, or unseen. This parameter can't be used with the `before` parameter.	Optional	49.0
`before`	String	Notifications occurring before this ISO 8601 formatted date string to mark as read,	Optional	49.0

Parameter	Return Type	Description	Required or Optional	Available Version
		unread, seen, or unseen. If unspecified, the default is the current date and time.		
`size`	Integer	Number of notifications to return. Values are from 1 through 20. If you specify a number greater than 20, only 20 notifications are returned. If unspecified, the default is 20.	Optional	49.0
`trimMessages`	Boolean	Specifies whether the content of notifications is trimmed (`true`) or displayed in full (`false`). If `true`, the title of notifications displays up to 120 characters and the body displays up to 320 characters. If `false`, the title of notifications displays up to 250 characters and the body displays up to 750 characters. If unspecified, the default is `true`.	Optional	50.0

Request body for PATCH

Root XML tag

```
<notifications>
```

JSON example

```
{
   "before": "2019-06-25T18:24:31.000Z",
   "read" : "true"
}
```

Properties

Name	Type	Description	Required or Optional	Available Version
`before`	String	Notifications occurring before this ISO 8601 formatted date string to mark as read, unread, seen, or unseen. If unspecified, the default is the current date and time.	Optional	49.0
`notificationIds`	String[]	List of up to 50 notification IDs to mark as read, unread, seen, or unseen. This property can't be used with the `before` property.	Optional	49.0

Name	Type	Description	Required or Optional	Available Version
`read`	Boolean	Marks notifications as read (`true`) or unread (`false`). If notifications are marked as read, they are also marked as seen. If you set `read` to `true` and `seen` to `false`, you get an error.	Required if `seen` isn't specified	49.0
`seen`	Boolean	Marks notifications as seen (`true`) or unseen (`false`).	Required if `read` isn't specified	49.0

Request parameters for PATCH

Parameter	Return Type	Description	Required or Optional	Available Version
`before`	String	Notifications occurring before this ISO 8601 formatted date string to mark as read, unread, seen, or unseen. If unspecified, the default is the current date and time.	Optional	49.0
`notificationIds`	String[]	List of up to 50 notification IDs to mark as read, unread, seen, or unseen.	Optional	49.0
`read`	Boolean	Marks notifications as read (`true`) or unread (`false`). If notifications are marked as read, they are also marked as seen. If you set `read` to `true` and `seen` to `false`, you get an error.	Required if `seen` isn't specified	49.0
`seen`	Boolean	Marks notifications as seen (`true`) or unseen (`false`).	Required if `read` isn't specified	49.0

Response body for GET and PATCH

Notification Collection

Notifications Status

Get the status of notifications for the context user.

Resource

`/connect/notifications/status`

Available since version

49.0

Requires Chatter

No

HTTP methods
GET

Response body for GET
Notification Status

Notification App Setting

Get, set, and reset a notification app setting for the org.

Notification app settings have default values that come from the notification type definition and application settings. Admins can disable standard notification app settings that are enabled by default; however, they can't enable standard notification app settings that are disabled by default. If your app accepts custom notification app settings, admins can enable custom notification app settings that are disabled by default.

Resource

```
/connect/notifications/app-settings/organization/notificationTypeOrId
```

Available version
47.0

Requires Chatter
No

HTTP methods
GET, POST, DELETE

Request parameters for GET

Parameter Name	Type	Description	Required or Optional	Available Version
`applicationId`	String	ID of the connected app. If not specified and called from a connected app, defaults to the app information from the session.	Optional	47.0

Response body for GET
Notification App Settings Collection

Request body for POST
Use POST to set a notification app setting.

Root XML tag

```
<notificationAppSetting>
```

JSON example

```
{
   "enabled":"false"
}
```

Properties

Name	Type	Description	Required or Optional	Available Version
`applicationId`	String	ID of the connected app. If not specified and called from a connected app, defaults to the app information from the session.	Optional	47.0
`enabled`	Boolean	Specifies whether to enable delivery of the notification type for the connected app (`true`) or not (`false`).	Optional	47.0

Request parameters for POST

Parameter Name	Type	Description	Required or Optional	Available Version
`applicationId`	String	ID of the connected app. If not specified and called from a connected app, defaults to the app information from the session.	Optional	47.0
`enabled`	Boolean	Specifies whether to enable delivery of the notification type for the connected app (`true`) or not (`false`).	Optional	47.0

Response body for POST

Notification App Setting

Request parameters for DELETE

Use DELETE to reset a notification app setting to the default.

Parameter Name	Type	Description	Required or Optional	Available Version
`applicationId`	String	ID of the connected app. If not specified and called from a connected app, defaults to the app information from the session.	Optional	40.0

Response for DELETE

204: Successful Delete

Notification App Settings

Get notification app settings for the org.

Resource

```
/connect/notifications/app-settings/organization
```

Available version

47.0

Requires Chatter

No

HTTP methods

GET

Request parameters for GET

Parameter Name	Type	Description	Required or Optional	Available Version
`applicationId`	String	ID of the connected app. If not specified and called from a connected app, defaults to the app information from the session.	Optional	47.0

Response body for GET

Notification App Settings Collection

IN THIS SECTION:

Notification App Setting

Notification app setting.

Notification App Settings Collection

Notification app settings.

Notification App Setting

Notification app setting.

Property Name	Type	Description	Filter Group and Version	Available Version
`applicationDevName`	String	Developer name of the connected app.	Medium, 47.0	47.0
`applicationId`	String	ID of the connected app.	Small, 47.0	47.0
`applicationName`	String	Name of the connected app.	Small, 47.0	47.0
`applicationNamespace`	String	Namespace of the connected app if it's installed with a managed package.	Medium, 47.0	47.0
`enabled`	Boolean	Specifies whether the notification type is enabled for the connected app (`true`) or not (`false`). If `true`, notifications of this type are displayed in the tray.	Small, 47.0	47.0

Property Name	Type	Description	Filter Group and Version	Available Version
`notificationLabel`	String	Display label of the notification.	Small, 47.0	47.0
`notificationTypeName`	String	API name of the custom notification type.	Medium, 47.0	47.0
`notificationTypeNamespace`	String	Namespace of the custom notification type if it's installed with a managed package.	Medium, 47.0	47.0
`notificationTypeOrId`	String	Notification type or ID of the custom notification type.	Small, 47.0	47.0
`pushEnabled`	Boolean	Specifies whether push is enabled for the notification type in the connected app (`true`) or not (`false`).	Small, 47.0	47.0

Notification App Settings Collection

Notification app settings.

Property Name	Type	Description	Filter Group and Version	Available Version
`notificationAppSettings`	Notification App Setting[]	Collection of notification app settings.	Small, 47.0	47.0

Notification Setting

Get, set, and reset a notification setting for the org.

Notification settings have default values that come from the notification type definition and application settings. Admins can disable notification settings that are enabled by default; however, they can't enable notification settings that are disabled by default.

Resource

```
/connect/notifications/settings/organization/notificationTypeOrId
```

Available version

47.0

Requires Chatter

No

HTTP methods

GET, POST, DELETE

Request body for POST

Use POST to set a notification setting.

Root XML tag

```
<notificationTargetSetting>
```

JSON example

```
{
   "desktopEnabled":"false"
}
```

Properties

Name	Type	Description	Required or Optional	Available Version
`desktopEnabled`	Boolean	Specifies whether to enable desktop delivery for the notification type (`true`) or not (`false`). If not specified, the setting doesn't change.	Optional	47.0
`emailEnabled`	Boolean	Specifies whether to enable email delivery for the notification type (`true`) or not (`false`). If not specified, the setting doesn't change.	Optional	47.0
`mobileEnabled`	Boolean	Specifies whether to enable mobile delivery for the notification type (`true`) or not (`false`). If not specified, the setting doesn't change.	Optional	47.0

Request parameters for POST

Parameter Name	Type	Description	Required or Optional	Available Version
`desktopEnabled`	Boolean	Specifies whether to enable desktop delivery for the notification type (`true`) or not (`false`). If not specified, the setting doesn't change.	Optional	47.0
`emailEnabled`	Boolean	Specifies whether to enable email delivery for the notification type (`true`) or not (`false`). If not specified, the setting doesn't change.	Optional	47.0
`mobileEnabled`	Boolean	Specifies whether to enable mobile delivery for the notification type (`true`) or not (`false`). If not specified, the setting doesn't change.	Optional	47.0

Response body for GET and POST

Notification Setting

Response for DELETE

Use DELETE to reset a notification setting to the default.

204: Successful Delete

IN THIS SECTION:

Notification Setting
Notification setting.

Notification Setting

Notification setting.

Property Name	Type	Description	Filter Group and Version	Available Version
`desktopEnabled`	Boolean	Specifies whether desktop delivery is enabled for the notification type (`true`) or not (`false`).	Small, 47.0	47.0
`emailEnabled`	Boolean	Specifies whether email delivery is enabled for the notification type (`true`) or not (`false`).	Small, 47.0	47.0
`mobileEnabled`	Boolean	Specifies whether mobile delivery is enabled for the notification type (`true`) or not (`false`).	Small, 47.0	47.0
`notificationLabel`	String	Display label of the notification.	Small, 47.0	47.0
`notificationTypeName`	String	API name of the custom notification type.	Medium, 47.0	47.0
`notificationTypeNamespace`	String	Namespace of the custom notification type if it's installed with a managed package.	Medium, 47.0	47.0
`notificationTypeOrId`	String	Notification type or ID of the custom notification type.	Small, 47.0	47.0

Notification Settings

Get notification settings for the org.

Resource

```
/connect/notifications/settings/organization
```

Available version

47.0

Requires Chatter

No

HTTP methods

GET

Response body for GET
Notification Settings Collection

IN THIS SECTION:

Notification Settings Collection
Notification settings.

Notification Settings Collection

Notification settings.

Property Name	Type	Description	Filter Group and Version	Available Version
`notificationSettings`	Notification Setting[]	Collection of notification settings.	Small, 47.0	47.0

CustomNotificationType

Stores information about custom notification types. This object is available in API version 46.0 and later.

Supported Calls

`create(), delete(), describeSObjects(), query(), retrieve(), update(), upsert()`

Fields

Field	Details
`CustomNotifTypeName`	**Type** string **Properties** Create, Filter, Group, idLookup, Sort, Unique, Update **Description** Specifies a notification type name. The notification type name is unique within your organization. Maximum number of characters: 80.
`Description`	**Type** textarea **Properties** Create, Filter, Group, Nillable, Sort, Update **Description** Specifies a general description of the notification type, which is displayed with the notification type name. Maximum number of characters: 255.

Field	Details
`Desktop`	**Type** boolean **Properties** Create, Defaulted on create, Filter, Group, Sort, Update **Description** Indicates whether the desktop delivery channel is enabled (`true`) or not (`false`). The default is `false`.
`DeveloperName`	**Type** string **Properties** Create, Filter, Group, Sort, Update **Description** Specifies the API name of the notification type.
`Language`	**Type** picklist **Properties** Create, Defaulted on create, Filter, Group, Nillable, Restricted picklist, Sort, Update **Description** Specifies the language of the custom notification type. The value for this field is the language value of the org.
`ManageableState`	**Type** ManageableState enumerated list **Properties** Filter, Group, Nillable, Restricted picklist, Sort **Description** Indicates the manageable state of the specified component that is contained in a package: • `beta` • `deleted` • `deprecated` • `deprecatedEditable` • `installed` • `installedEditable` • `released` • `unmanaged`
`MasterLabel`	**Type** string

Field	Details
	Properties Create, Filter, Group, Sort, Update **Description** Specifies the notification type label.
`Mobile`	**Type** boolean **Properties** Create, Defaulted on create, Filter, Group, Sort, Update **Description** Indicates whether the mobile delivery channel is enabled (`true`) or not (`false`). The default is `false`.
`NamespacePrefix`	**Type** string **Properties** Filter, Group, Nillable, Sort **Description** Specifies the namespace of the notification type, if installed with a managed package.

Note: CustomNotificationType is exposed in Tooling API to user profiles with the View Setup and Configuration permission. To create and edit notification types, the Customize Application permission is required.

Notification Builder Platform Push Payloads

Learn about how we handle push payload content for custom notifications.

Notification Builder Platform provides mobile push notifications for iOS apps through the Apple Push Notification Service (APNs) and for Android apps through the Firebase Cloud Messaging (FCM).

Push payloads are sent with encrypted content when the mobile app supplies an RSA public encryption key upon push registration with the Salesforce push notification service. When a payload is sent from a customer org to a user's device, the mobile app processes and decrypts the payload. For more details about key registration and payload decryption, see the Mobile SDK Development Guide.

Push payloads are sent with unencrypted content if the mobile app doesn't provide an encryption key.

IN THIS SECTION:

iOS Custom Push Payload Content
Use these keys and values to create custom iOS push notifications for your connected app.

EDITIONS

Available in: Lightning Experience

Connected Apps can be created in: **Group**, **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

Connected Apps can be installed in: **All** Editions

Android Custom Push Payload Content

Use these keys and values to create custom Android push notifications for your connected app.

iOS Custom Push Payload Content

Use these keys and values to create custom iOS push notifications for your connected app.

EDITIONS

Available in: Lightning Experience

Connected Apps can be created in: **Group**, **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

Connected Apps can be installed in: **All** Editions

Table 1: APS Dictionary Keys

Payload Key	Description	Value
`sound`	Sound played on alert display.	`default`
`badge`	Number displayed in a badge on your app's icon.	Count of unseen notifications
`mutable-content`	Indicates payload content that requires handling by the notification extension. Included with encrypted payloads only.	`true`

Table 2: Alert Dictionary Keys

Payload Key	Description	Value
`title`	Alert title. Displayed by default for iOS remote notifications For encrypted payloads, the MSDK notification extension extracts and displays the custom `alertTitle` key value supplied in encrypted content.	Empty string
`body`	Alert body. Displayed by default for iOS remote notifications	The custom notification title is supplied as the value for this key. For MSDK notification extension failures only, use this value in a body-only alert.

Table 3: Custom Keys

Payload Key	Description	Value
`content`	Encrypted payload content See the Encrypted Content Keys table for content details.	AES encrypted and base64 encoded payload content
`secret`	Symmetric encryption key	RSA encrypted and base64 encoded AES key and IV bytes

Payload Key	Description	Value
`encrypted`	Encrypted payload indicator	`true`

Table 4: Encrypted Content Keys

Payload Key	Description	Value
`oid`	Organization ID	ID of org where notification originated
`uid`	Recipient User ID	ID of notification recipient
`nid`	Notification ID	ID of the notification
`type`	Notification type class	`-1`
`sid`	Source ID	ID of record associated with notification
`rid`	Related ID	N/A (reserved for future use)
`cid`	Experience Cloud site ID	ID of Experience Cloud site for the notification
`notifType`	Notification type ID	ID of the custom notification type
`alertTitle`	Notification alert title	• If full content push notifications are enabled for the app: Custom notification title • If full content push notifications aren't enabled for the app: Empty string
`alertBody`	Notification alert body	• If full content push notifications are enabled for the app: Custom notification body • If full content push notifications aren't enabled for the app: Custom notification title

Android Custom Push Payload Content

Use these keys and values to create custom Android push notifications for your connected app.

EDITIONS

Available in: Lightning Experience

Connected Apps can be created in: **Group**, **Essentials**, **Professional**, **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

Connected Apps can be installed in: **All** Editions

Table 5: Payload Keys

Payload Key	Description	Value
`content`	Encrypted payload content See the Encrypted Content Keys table for content details.	AES encrypted and base64 encoded payload content
`secret`	Symmetric encryption key	RSA encrypted and base64 encoded AES key and IV bytes
`encrypted`	Encrypted payload indicator	`true`

Table 6: Encrypted Content Keys

Payload Key	Description	Value
`badge`	Number displayed in a badge on your app's icon	Count of unseen notifications
`timestamp`	Time notification was sent	Seconds since 00:00:00 UTC on January 1, 1970
`oid`	Organization ID	ID of the org of the recipient of the notification
`uid`	Recipient User ID	ID of notification recipient
`nid`	Notification ID	ID of the notification
`alert`	Notification alert	The custom notification title is supplied as the value for this key regardless of the Enable full content push notifications setting.
`alertTitle`	Notification alert title	• If full content push notifications are enabled for the app: Custom notification title • If full content push notifications aren't enabled for the app: Empty string
`alertBody`	Notification alert body	• If full content push notifications are enabled for the app: Custom notification body • If full content push notifications aren't enabled for the app: Custom notification title

Payload Key	Description	Value
`type`	Notification type class	`-1`
`sid`	Source ID	ID of record associated with notification
`rid`	Related ID	N/A (reserved for future use)
`cid`	Experience Cloud site ID	ID of Experience Cloud site for the notification
`notifType`	Notification type ID	ID of the custom notification type

Custom Invocable Actions

Returns the list of all custom actions. You can also get basic information for each type of action.

This resource is available in REST API version 32.0 and later.

Syntax

URI

Get a list of custom actions:

`/v`***`XX.X`***`/actions/custom`

Formats

JSON, XML

HTTP Methods

GET, HEAD, POST

Authentication

`Authorization: Bearer` ***`token`***

Parameters

None

Notes

Sending email with the emailAlert action counts against your daily email limit for workflows. For more information, see "Daily Allocations for Email Alerts" in the Salesforce Help.

When invoking an Apex action using the POST method and supplying the inputs in the request, only the following primitive types are supported as inputs:

- `Blob`
- `Boolean`
- `Date`
- `Datetime`
- `Decimal`
- `Double`
- `ID`
- `Integer`

- `Long`
- `String`
- `Time`

Describe and invoke for an Apex action respect the profile access for the Apex class. If you don't have access an error is issued.

If you add an Apex action to a flow, and then remove the Invocable Method annotation from the Apex class, a runtime error in the flow occurs.

When a flow user invokes an autolaunched flow, the active flow version runs. If there's no active version, the latest version runs. When a flow admin invokes a flow, the latest version always runs.

If any of the following elements are used in a flow, packageable components that reference these elements aren't automatically included in the package.

- Apex action
- Email alerts
- Post to Chatter core action
- Quick Action core action
- Send Email core action
- Submit for Approval core action

For example, if you use an email alert, manually add the email template that is used by that email alert. To deploy the package successfully, manually add those referenced components to the package.

Example

Retrieving a list of custom actions for the current organization:

```
/services/data/v51.0/actions/custom
```

JSON Response body

```
{
  "quickAction" : "/services/data/v51.0/actions/custom/quickAction",
  "apex" : "/services/data/v51.0/actions/custom/apex",
  "emailAlert" : "/services/data/v51.0/actions/custom/emailAlert",
  "flow" : "/services/data/v51.0/actions/custom/flow"
}
```

INDEX