# How Push notifications work

1. The android device will send its sender id and application id to GCM server for registration.
2. When Registration is complete, GCM server issues registration id to android device.
3. After receiving registration id, the device will send registration id to our server.
4. Our server will store registration id in the database for further use.
   1. Whenever push notification is needed, our server sends a message to GCM server along with device registration id
   2. GCM server will deliver that message to the android device using the device registration id.

1

2

3

4

A

B

**Server**

**Database**

**Adroid Device**

**GCM**

# Google Cloud Messaging (GCM)

This is a mobile [notification service](https://en.wikipedia.org/wiki/Notification_service) developed by [Google](https://en.wikipedia.org/wiki/Google) that enables third-party application developers to send notification data or information from developer-run servers to applications that target the [Google Android](https://en.wikipedia.org/wiki/Android_(operating_system)) Operating System, as well as applications or extensions developed for the [Google Chrome](https://en.wikipedia.org/wiki/Chrome_(browser)) internet browser. It is available to developers free of charge. The GCM Service was first announced in June 2012 as a successor to Google's now-defunct [Android Cloud to Device Messaging](https://en.wikipedia.org/wiki/Android_Cloud_to_Device_Messaging) (C2DM) service, citing improvements to authentication and delivery, new API endpoints and messaging parameters, and the removal of limitations on API send-rates and message sizes. It has been superseded by Google's [Firebase Cloud Messaging](https://en.wikipedia.org/wiki/Firebase_Cloud_Messaging) (FCM).

Google Cloud Messaging functions using server [APIs](https://en.wikipedia.org/wiki/Application_programming_interface) and [SDKs](https://en.wikipedia.org/wiki/Software_development_kit), both maintained by Google. The GCM has the ability to send [push notifications](https://en.wikipedia.org/wiki/Push_technology), deep-linking commands, and application data. Larger messages can be sent with up to 4 KB of [payload](https://en.wikipedia.org/wiki/Payload_(computing)) data. Upon allowing the application permission to receive and display notifications, the client application sends a registration API request to the Google Cloud Messaging interface to begin the registration process. The GCM Service receives and acknowledges the request and responds by giving the device a GCM Registration ID, a unique identifier that the developer later uses to send a notification to the individual device. The identifier is stored onto the device, and is typically sent to the developer's application server to be stored. The GCM Registration ID is a randomly-generated identifier that does not contain any personal or device information that could allow a developer to discover the personal identity of the user. When the developer wishes to send a notification event to a device, the process begins with an API POST request being sent to the GCM Authentication Service. The POST request includes the GCM Registration ID, priority, optional values and links, and the information that is to be displayed on the device upon its arrival. Upon successful verification of the GCM Registration ID and other credentials, an authentication token is returned. Both identifiers are then sent to the GCM Service to be enqueued and delivered to the device.