
Flexisip Push Gateway

September 2016

In addition to be highly recommended on most OS, Push notifications are now mandatory on iOS 10 and Windows Phone.

Based on iOS/Android/Microsoft push systems, [FlexiSIP Push Gateway](#) has been developed by BC to deliver SIP incoming calls or text messages on mobile device platforms where receiving information while phone is off is unreliable or not supported.

Why?

- Phone makers are worried about battery consumption due to apps running in background: all platforms at least suspend execution of applications while phone is off to save battery. In the best case, apps are resumed when data is received on their existing connection.
- 3G operators are requested to prioritize the traffic to push servers (otherwise they run into big problems with apple or google...)

The push system is presented as the efficient, highly reliable, bug-free system to receive information while the phone is off.

What is a push system?

- No magic: the phone just keeps a TCP encrypted socket connected all the time to a push server at google/apple/microsoft, in order to receive information from this server.
- The notification can include text to be displayed to users as well as any kind of app-specific information.
- The push service provider provides also a web service for third parties to request the push server to send small notifications to a device identified uniquely.

Push notification mandatory :

- **Applications compiled with Xcode >= 8 (ie iOS 10)** have their TCP connections silently closed when the app goes to background mode. The PushKit framework allows to receive invisible push notifications that just wake up the application in the purpose of connecting to the SIP server to receive the pending call or message.*
- On Windows Phone, when an app is put in background or when the screen is off, the app is killed. The push notification allows the user to restart the app and process the call.

Push notification highly recommended :

- A VoIP app can work without Push Notifications on all Android versions and on iOS versions up to iOS 9 (sockets can receive information while the phone is off or app is in background, hence resuming the app).
- However, the push notification is a fallback solution **in networks where long living connections are unreliable** (ex: cellular network that discards inactive TCP connections).

Flexisip is the name of a general purpose SIP proxy server developed by BC, which includes specific features for mobile phones, like a [push gateway](#).

Main features :

- SIP over UDP, TCP, TLS
- NAT helper, media relay
- STUN server
- Digest authentication based on external SQL password database or static file.
- Registrar
- Audio transcoding
- High level event logging for activity monitoring.
- High availability and cluster mode operation for large deployments.
- Interconnected with push notifications systems for reliably notifying mobile apps of incoming calls or messages.

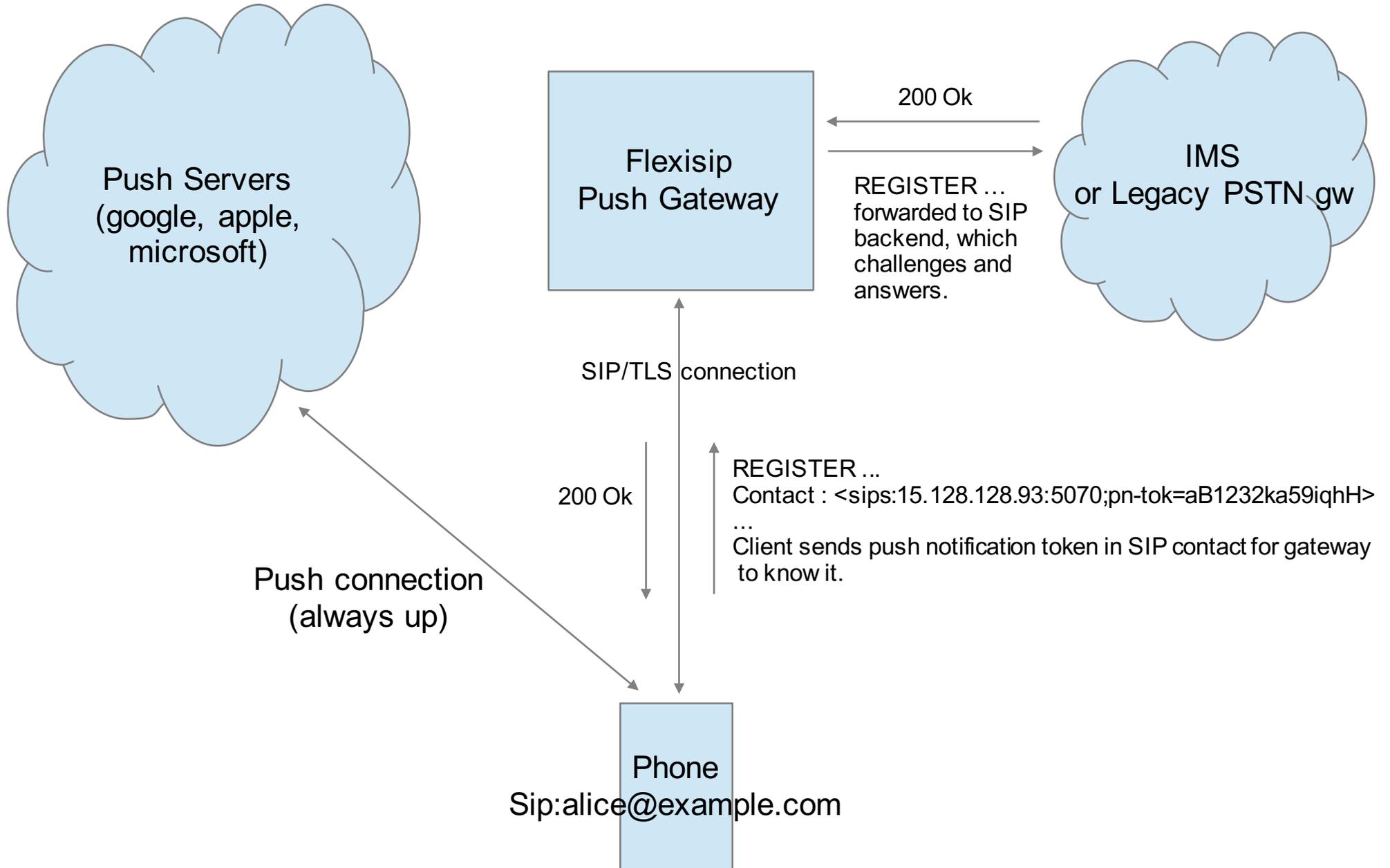
Flexisip is hosting the free sip.linphone.org service (303 945 users, september 2016) with push notifications enabled.

Easy to install, configure and maintain, this SIP server offers all the features necessary to deploy a SIP service optimized for mobile applications.

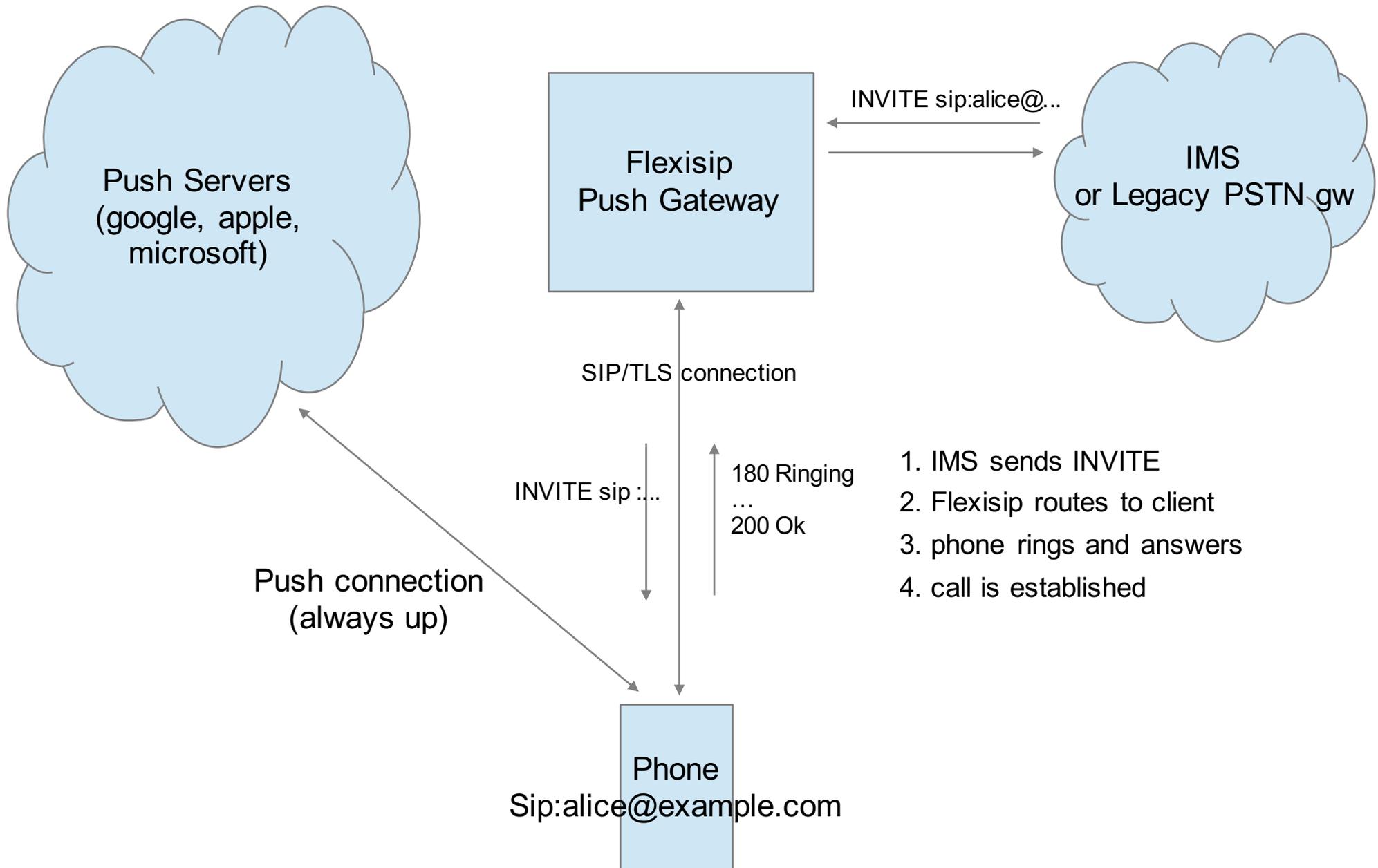
How does it works?

- You can keep your existing SIP servers and add some flexisip servers as frontends, between clients and existing SIP servers
- Flexisip proxies send REGISTER, INVITEs and MESSAGEs and take care of sending push notifications to clients to notify them about calls or text messages
- In most case, no configuration changes are needed on the existing SIP servers
 - ✓ Fully interoperable with Linphone-based applications
 - ✓ Guaranteed delivery, through message storage and retry mechanisms
 - ✓ Easy to interconnect with your existing SIP architecture

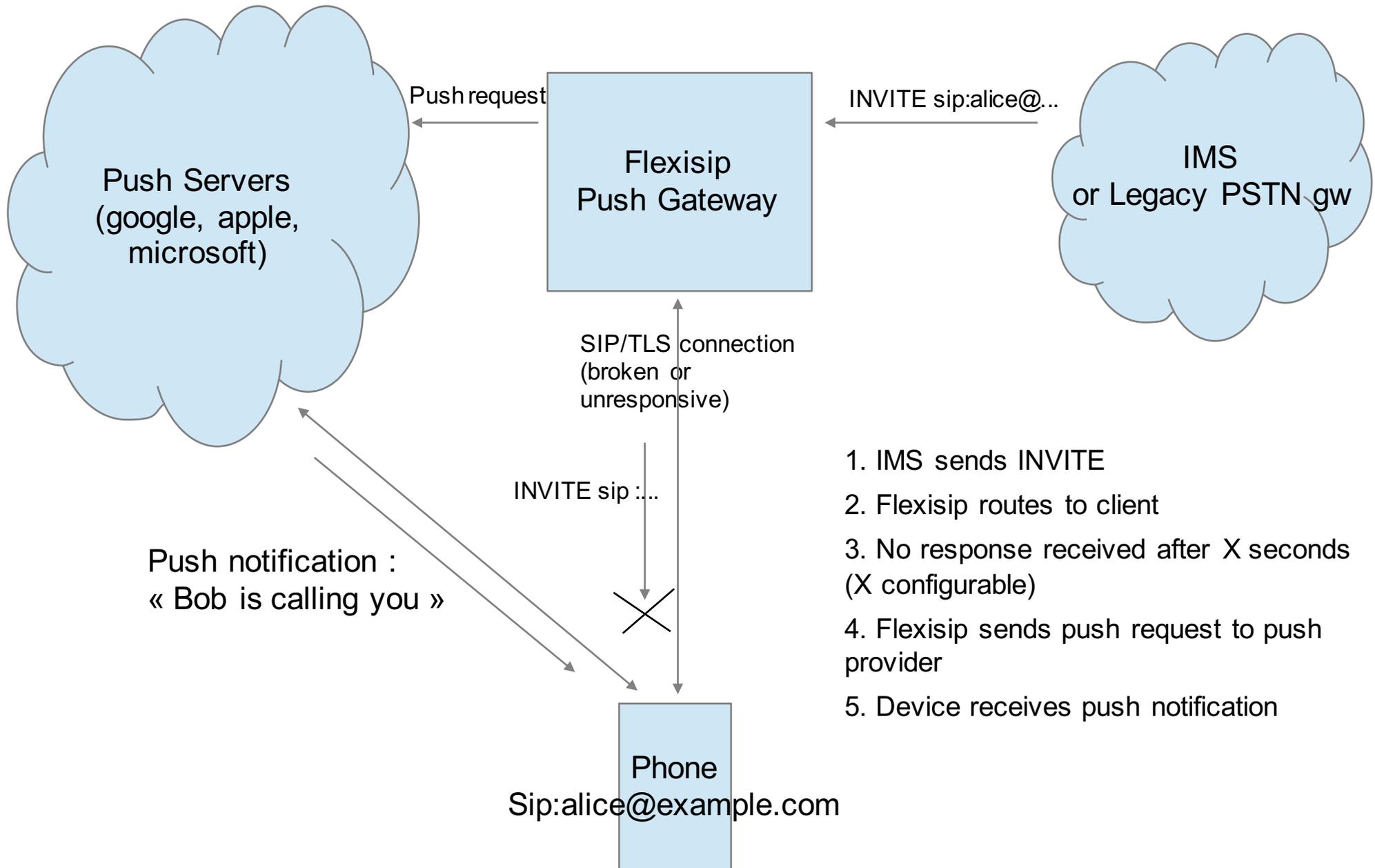
FlexiSIP Push Gateway in the network



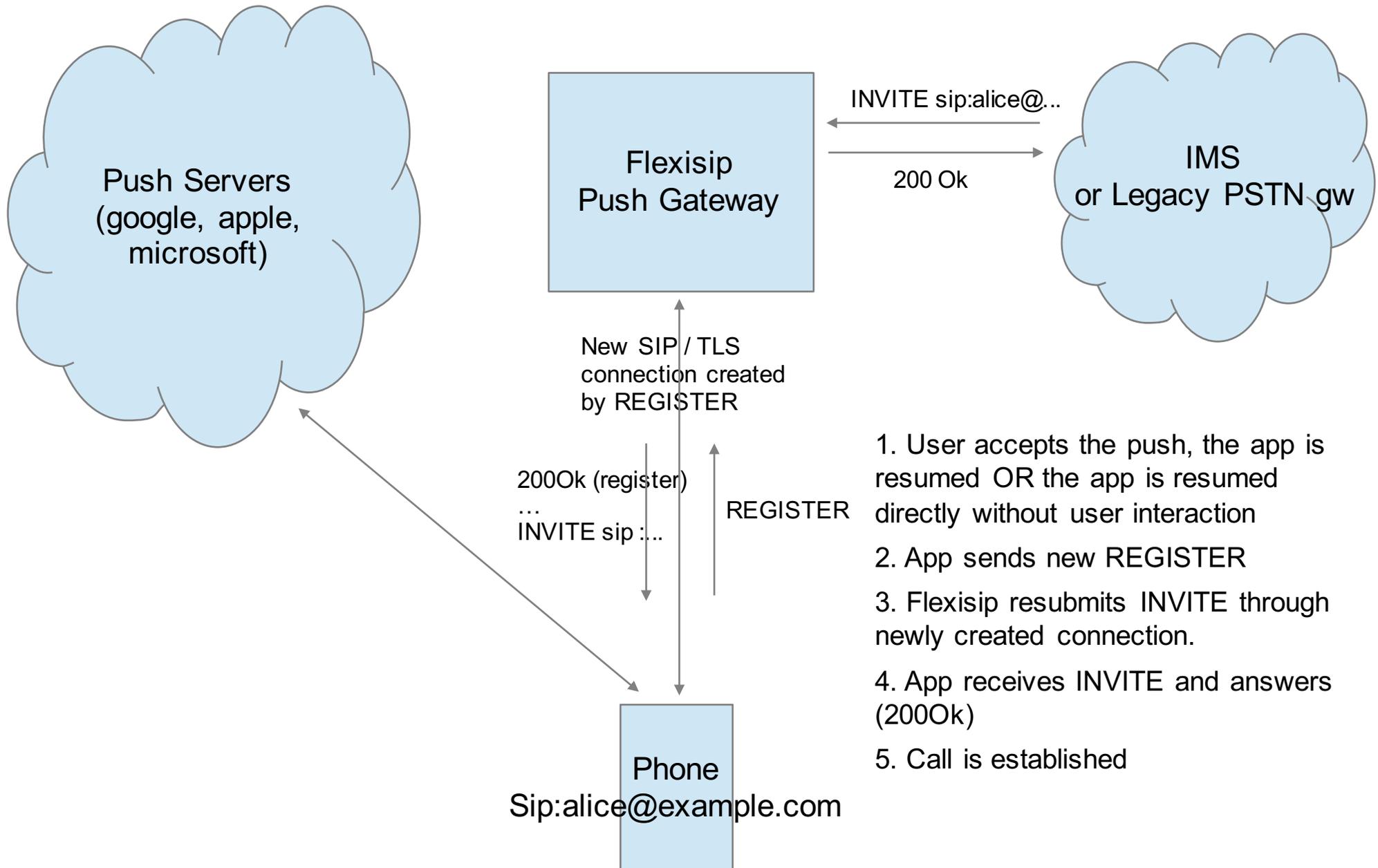
Scenario 1 : incoming call is delivered directly



Scenario 2 : call delivery via push (1/2)



Scenario 2 : call delivery via push (2/2)





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