

Mobile Computing

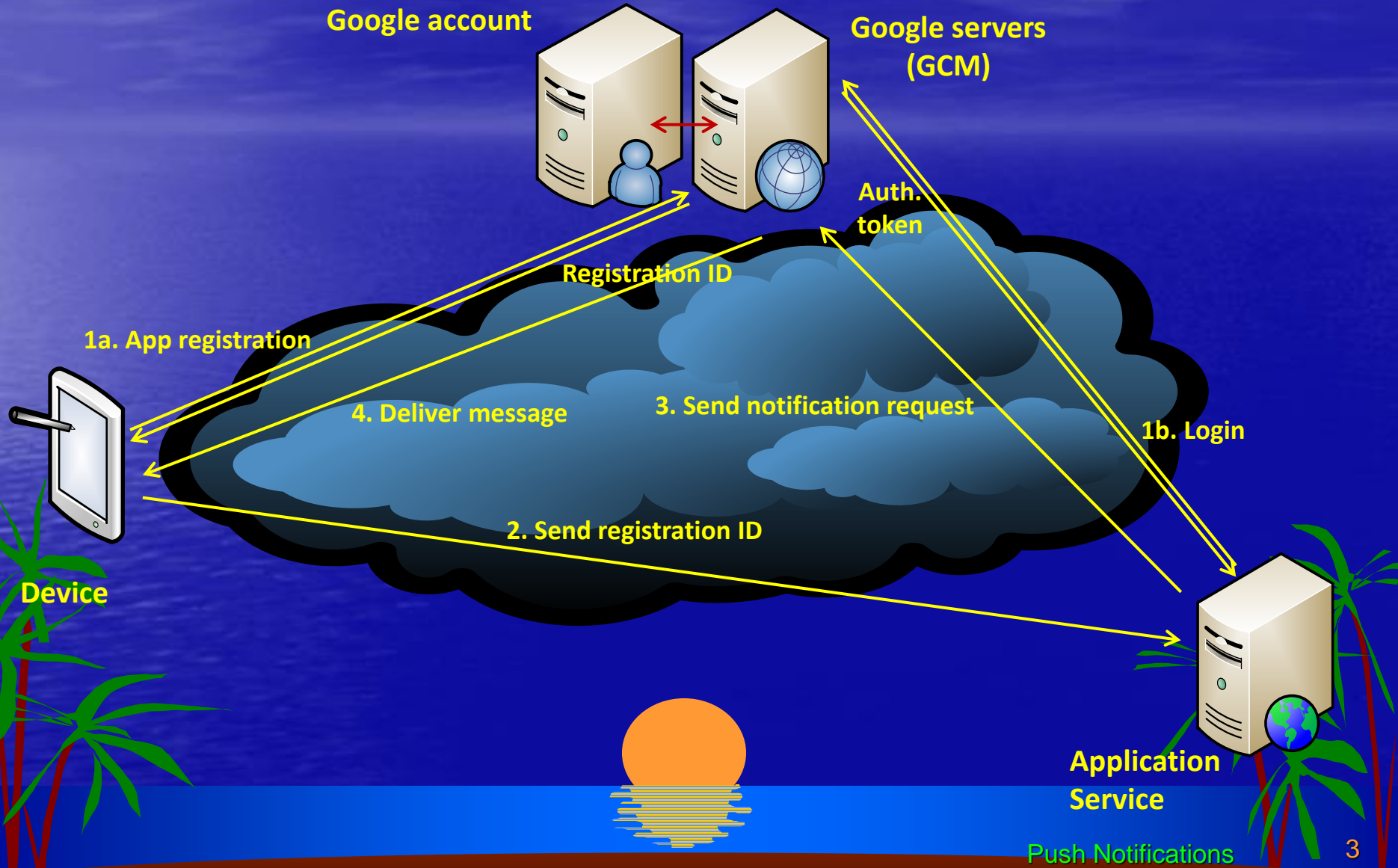
Push Notifications

Push notifications

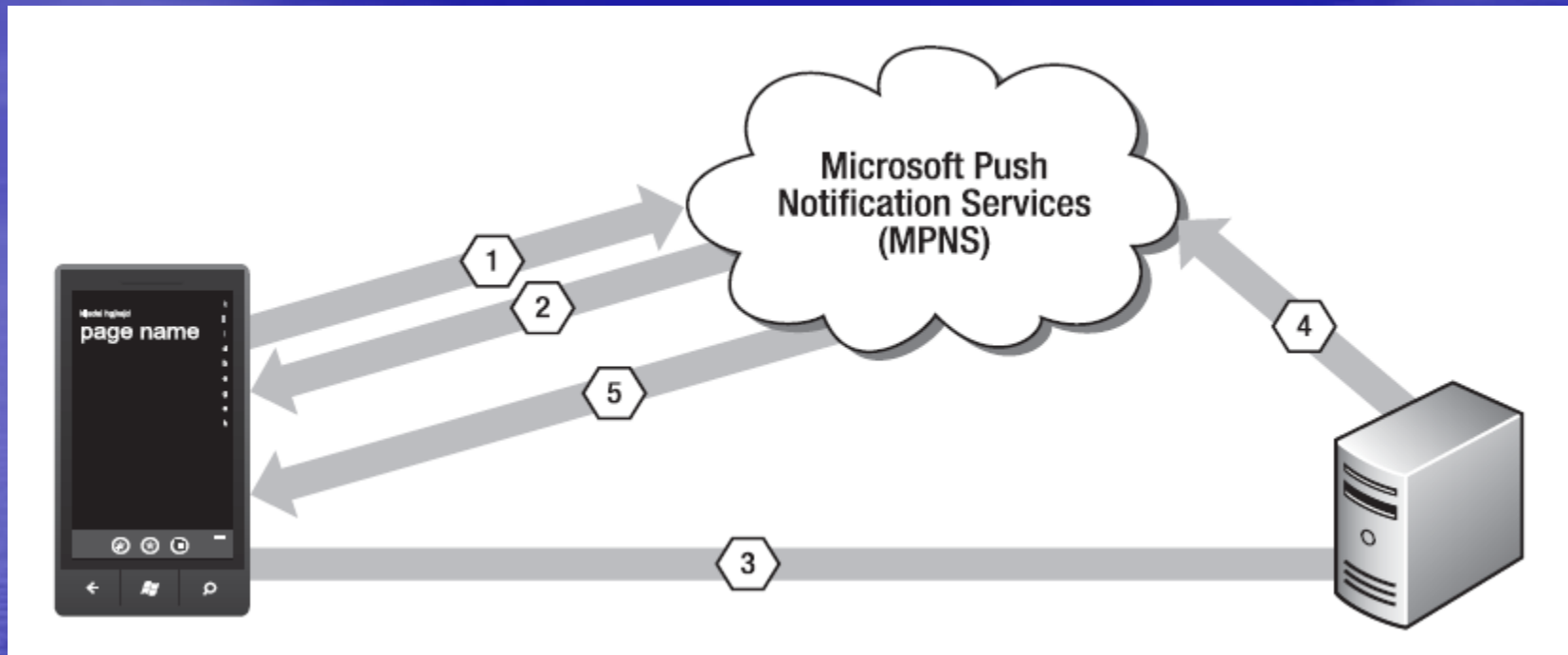
❖ For acquiring new information from an external server

- One approach could be periodically polling the server for new information
 - A service in the device must be always active
 - An alarm could be used to run the method that polls the service
 - But, using continuously an active radio consumes a lot of battery
- Another approach would be the server to inform the device about new info, when it is available
 - Problem: the server must know the device address and a channel must be open to receive the messages
 - Solution: The device communicates its address to the server whenever it changes and has an associated channel
 - All mobile platform providers have now these functionalities
 - Global registration and sending server are available by all

Push notifications (GCM)



Windows Push Notifications

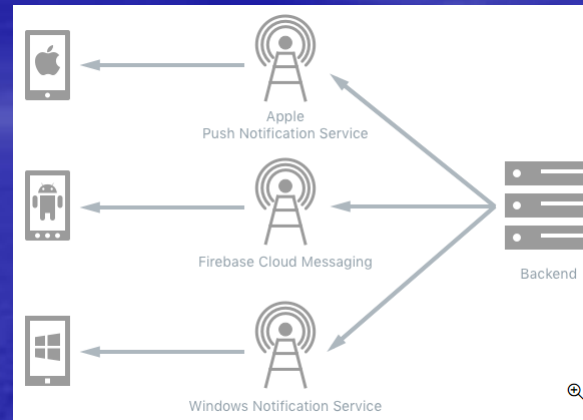


Now known as the Windows Notification Service (WNS)

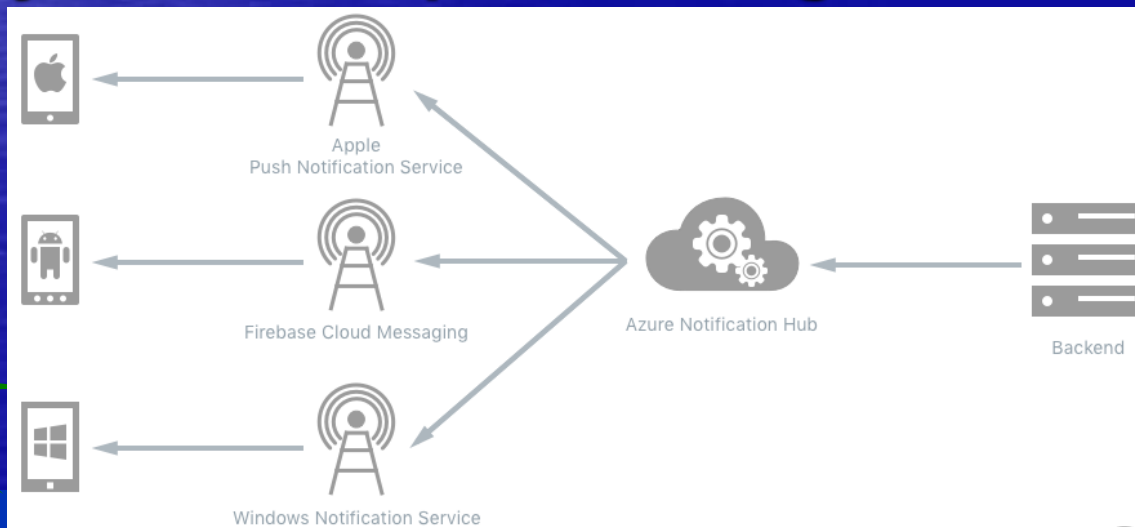
1. Registering the application and creation of a channel
2. Answer with a URI for asking a notification (the URI is unique for the phone and app)
3. Sending the previous URI to an external application or service
4. Asking to send a notification (with the message to be transmitted)
5. Sending the notification to the phone and registered application

Cross-platform push notifications

❖ In the past different platform, different requests



❖ Now, just one request, using a backend service



Push Notifications in Xamarin

- ❖ As the services are different, some code must be written in the platform projects
 - In the server side there are suppliers that can unify several platforms
 - Azure, Urban Airship, Amazon SNS Mobile, Firebase
 - Recently Visual Studio has the App Center for build, test, release, monitor and managing push notifications for several platforms
 - <https://appcenter.ms>
 - There is a guide for implementing in Xamarin
 - (App Center) <https://docs.microsoft.com/en-us/appcenter/push>
 - (Azure) <https://docs.microsoft.com/en-us/xamarin/xamarin-forms/data-cloud/push-notifications>
 - Firebase now has a service for Android and iOS