

# Bluetooth

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# What is Bluetooth?

- A universal wireless technology standard used to transmit data over short distances in an ad-hoc network
- Short range (~10 m)
- Low power consumption
- 1 Mbit/s data rate

# What is Bluetooth used for?

- Connecting devices
  - Hands free headsets
  - Wireless headphones
  - Wireless speakers
- Data transmission
  - Airdrop
  - Wireless hotspots
- Location tracking
  - Beacons (Gimbal and Estimote)
    - iBeacon, Eddystone
  - Key/Wallet tracking devices
    - TrackR, Tile



# Core Bluetooth Framework

## Two Sides

### Central

Wants Data

Can scan or listen for data

Can request for data

### Peripheral

Has Data

Sends advertising packets

Contains services and characteristics

# Performing Actions on the Central Side

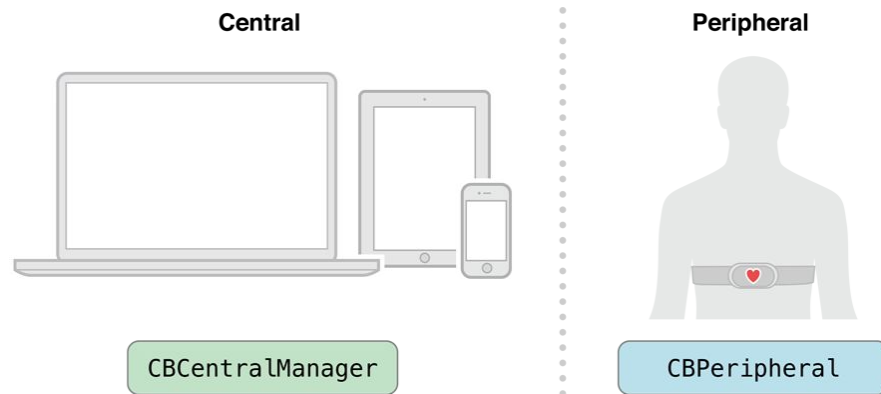
Look for a Peripheral Device

Discover Services

Discover Characteristics

Read Values of Characteristics

Subscribe to a Characteristic



# Performing Actions on the Peripheral Side

UUIDs (Universally Unique Identifiers)

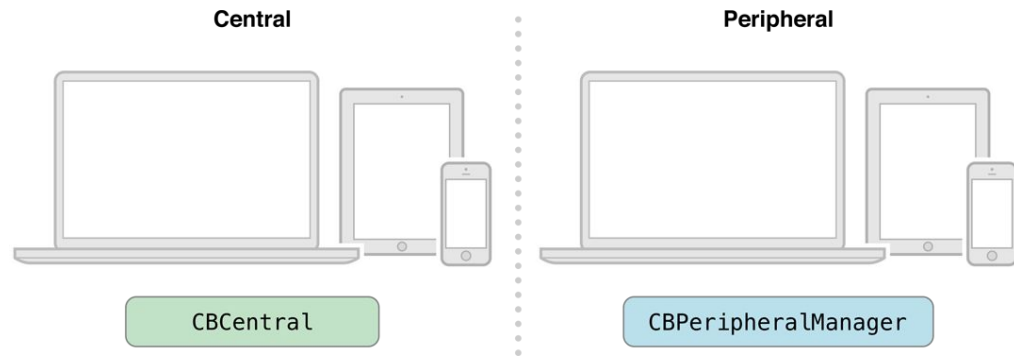
Uuidgen for custom services and characteristics

Create Mutable Characteristics

Publish to Device's Database

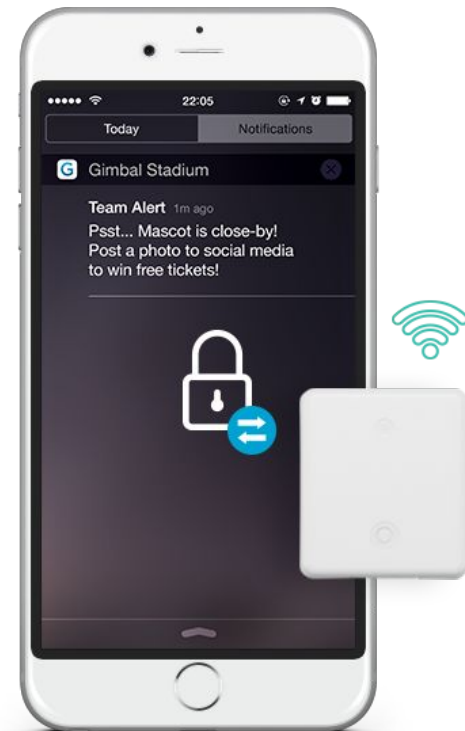
Advertise Services

Respond to Central



# Gimbal Beacons

- Utilizes Bluetooth Low Energy (BLE) technology to provide phones with contextual data once they are in range
- Range distances are measured in RSSI (Received Signal Strength Indicator)
- Once the beacons sends data to the phone, the data is also uploaded to the Gimbal Cloud Platform for more advanced analytics
- Gimbal beacons can be configured using the online Gimbal Manager



# Gimbal Framework and iOS SDK

- After installing the gimbal framework, register application and get API Key using online Gimbal Manager

Applications

Applications > com.gimbal.test

Application was successfully created. ✕

App Details Help

|                |                                      |      |   |
|----------------|--------------------------------------|------|---|
| ID             | 18F34892E98B4019AE92C8B64BE76D94     |      |   |
| * Name         | My App Name                          |      |   |
| Platform       | ios                                  |      |   |
| * Category     | Demo ▾                               |      |   |
| Bundle ID      | com.gimbal.test                      |      |   |
| Gimbal API Key | 8706617e-c51c-446b-8baa-0857665c08ad | Copy | 🔗 |
| Date Created   | 2015-10-22 10:29:33 UTC              |      |   |

Save



Set API Key like this...

```
class AppDelegate: UIResponder, UIApplicationDelegate {  
    var window: UIWindow?  
  
    func application(application: UIApplication, didFinishLaunchingWithOptions launchOptions:  
        [NSObject: AnyObject]?) -> Bool {  
        // Override point for customization after application launch.  
        Gimbal.setAPIKey("Your API KEY", options: nil);  
        return true  
    }  
}
```

# Add GMBLPlaceManagerDelegate to your ViewController

And fulfill requirements...

```
var placeManager: GMBLPlaceManager
...

placeManager = GMBLPlaceManager()
...

placeManager.delegate = self
```

```
func placeManager(manager: GMBLPlaceManager, didBeginVisit visit: GMBLVisit) {
    // this will be invoked when a place is entered
}

func placeManager(manager: GMBLPlaceManager, didEndVisit visit: GMBLVisit) {
    // this will be invoked when a place is exited
}
```

# But you're not done yet

Just need to start monitoring

```
if (!GMBLPlaceManager.isMonitoring()){  
    GMBLPlaceManager.startMonitoring();  
    print("Start Monitoring");  
}
```

**DEMO**

# Questions?

For more info: <https://docs.gimbal.com/iosdocs/v2/swiftguide.html>