

AND A LITTLE BIT OF  BEACONS

MULTIPEERCONNECTIVITY

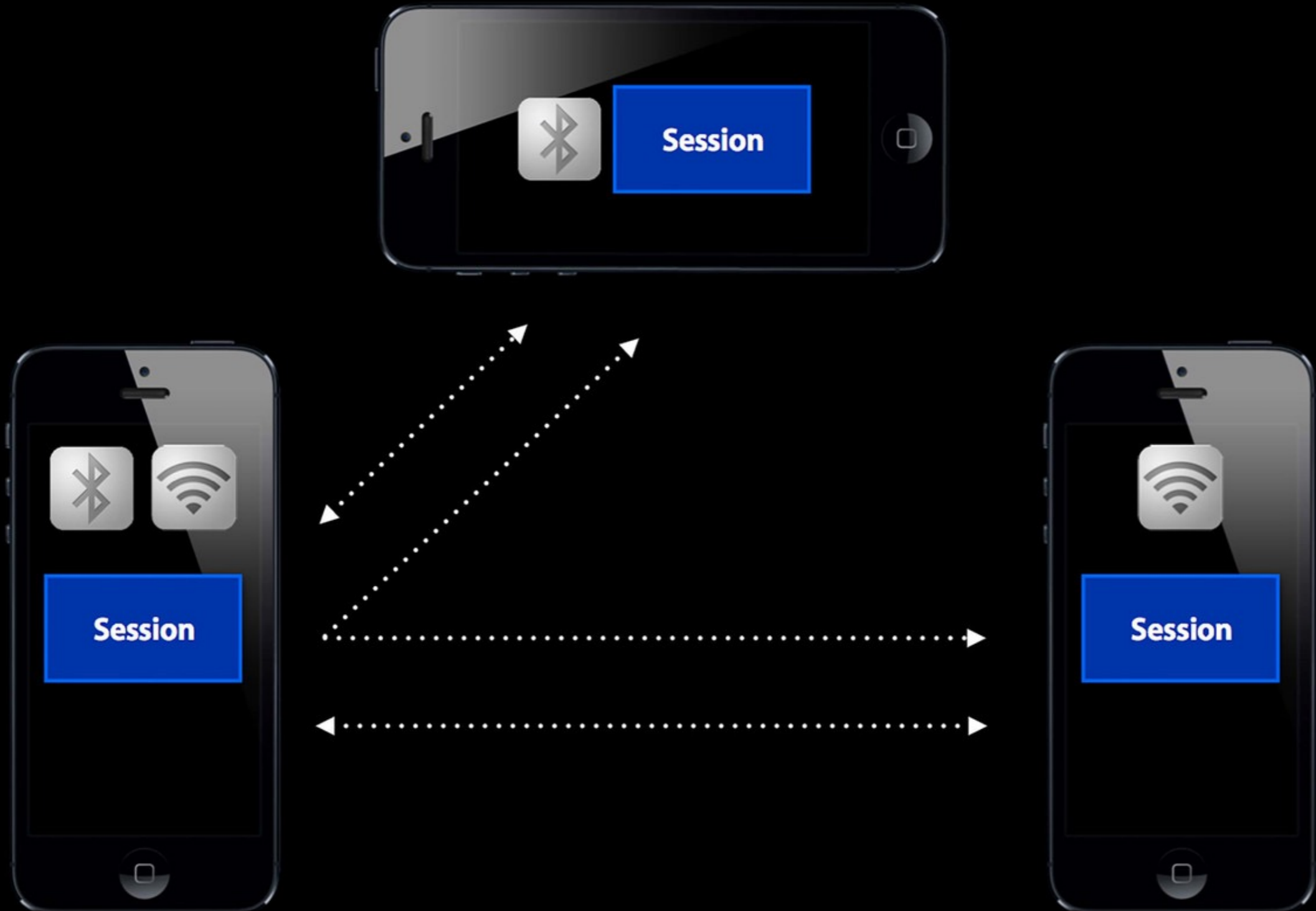
WHAT IS IT?

- ▶ MultipeerConnectivity is a framework by Apple introduced with iOS 7
- ▶ Available on iOS, tvOS, and macOS

infrastructure Wi-Fi networks,
peer-to-peer Wi-Fi, and Bluetooth

infrastructure Wi-Fi, peer-to-peer Wi-Fi,
and Ethernet

WHAT CAN IT DO?



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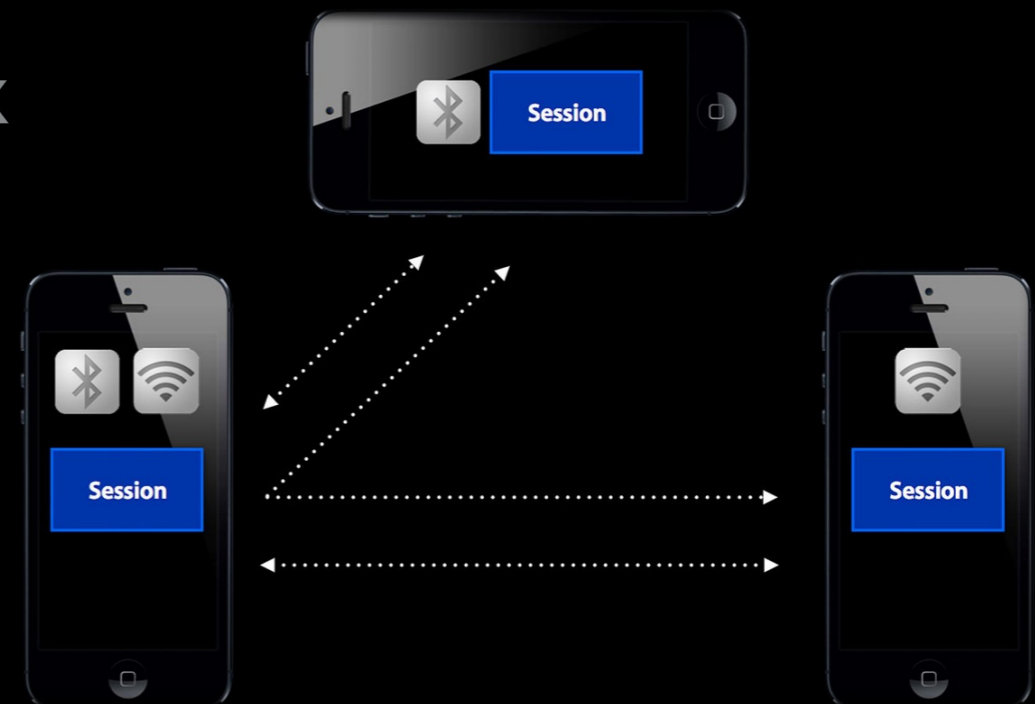
- ▶ Mesh Networks out-of-the-box

- ▶ Send Data

- ▶ Streaming

- ▶ Send Files

- ▶ Send it unreliable



HOW TO DO IT?

```
let randomIdentifier = Int(arc4random_uniform(999))
self.peerID = MCPeerID(displayName: "Peer#\($randomIdentifier)")
self.mcSession = MCSession(peer: peerID, securityIdentity: nil, encryptionPreference: .none)

self.mcBrowser = MCNearbyServiceBrowser(peer: peerID, serviceType: MCCController.service)
self.mcAdvertiser = MCNearbyServiceAdvertiser(peer: peerID, discoveryInfo: nil, serviceType:
                                             MCCController.service)

...
self.mcBrowser.startBrowsingForPeers()
self.mcAdvertiser.startAdvertisingPeer()

do {
    try self.mcSession.send(„A really great String”.data(using: String.Encoding.utf8)!, toPeers:
                           self.mcSession.connectedPeers, with: .reliable)
} catch {
    print(error)
}
```

HOW TO DO IT?

```
(999) )
andomIdentifier)")
rityIdentity: nil, encryptionPreference: .none)

peerID, serviceType: MController.service)
(peer: peerID, discoveryInfo: nil, serviceType:
MController.service)
```

HOW TO DO IT?

```
(999)
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peerID, serviceType: MCTcontroller.service)
(peer: peerID, discoveryInfo: nil, serviceType:
MCTcontroller.service)
```

CONCLUSION

- ▶ Easy pairing of up to 8 devices
- ▶ Span mesh-networks
- ▶ Send data to all with different reliable levels
- ▶ Encrypt the traffic

HOW BEACON TECHNOLOGY CAN SUPPORT MULTIPeer CONNECTIVITY

- ▶ How to notify a device?
- ▶ ~~Remote push notifications~~
- ▶ spawn an iBeacon on device
- ▶ Locale UserNotification if iBeacon detected
- ▶ 🙅 no support for background advertising
- ▶ 🙅 no support for tvOS and macOS

CORE BLUETOOTH

- ▶ support for iOS, macOS and(!) tvOS
- ▶ listening and advertising in background is possible but unreliable
- ▶ nearly impossible if both apps are in background

A LITTLE BIT OF  BEACON

DEMO