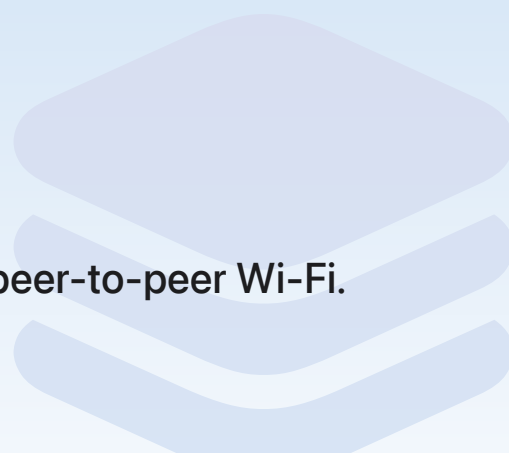


Framework

Wi-Fi Aware

Securely pair and connect to external devices over peer-to-peer Wi-Fi.

iOS 26.0+ | iPadOS 26.0+



Overview

Wi-Fi Aware™ (also known as Neighbor Awareness Networking or NAN) is a Wi-Fi Alliance™ standard specification that enables devices to securely discover, pair, and communicate with nearby devices without an internet connection or access point. Your app can use the Wi-Fi Aware framework to connect with Wi-Fi Aware certified accessories. The framework offers a secure and standardized way to establish peer-to-peer (P2P) connections between Wi-Fi devices, providing networking capabilities such as:

- High-bandwidth and low-latency data transfers
- Connections to paired devices that are authenticated and encrypted at the Wi-Fi layer
- Simultaneous connections to multiple Wi-Fi Aware devices
- Simultaneous use of Wi-Fi Aware devices and a Wi-Fi infrastructure network
- Fully peer-to-peer topology, allowing peers to come and go without breaking connections to other peers

The Wi-Fi Aware technology works without the need for Wi-Fi infrastructure networks, cellular links, internet connections, or cloud servers. Your app can pair Wi-Fi Aware devices using [AccessorySetupKit](#) or [DeviceDiscoveryUI](#). When paired, your app can create secure, authenticated, and encrypted peer-to-peer connections between paired devices on-demand, using the Wi-Fi Aware and [Network](#) frameworks.

Your app may connect to paired Wi-Fi Aware devices whenever it's running, in both foreground and background states. Your app may get runtime using any of the existing mechanisms on the platform, such as with the [BackgroundTasks](#) API.

If you are building a hardware device or accessory that uses Wi-Fi Aware, refer to the Wi-Fi Aware chapter of the [Accessory Guide](#) for the requirements to work well with Apple devices.

Important

The following Apple devices support the Wi-Fi Aware framework:

- iPhone 12 and later
- iPad (10th generation) and later
- iPad Air (4th generation) and later
- iPad Pro 11-inch (3rd generation) and later
- iPad Pro 12.9-inch (5th generation) and later
- iPad mini (6th generation) and later

Topics

Essentials



Building peer-to-peer apps

Communicate with nearby devices over a secure, high-throughput, low-latency connection by using Wi-Fi Aware.



Connecting devices for peer-to-peer Wi-Fi

Make outgoing and accept incoming secure connections with paired devices.



Adopting Wi-Fi Aware

Add entitlements and declare your app's services.

`com.apple.developer.wifi-aware`

The entitlement the system requires for an app to use the Wi-Fi Aware framework.

`WiFiAwareServices`

Dictionaries of Wi-Fi Aware services that the app can publish or subscribe to.

Host capabilities

`struct WACapabilities`

A structure that checks the host device's supported features and capabilities.

`enum Feature`

Features that your app's current host device can support.

Services to discover

`protocol WService`

A protocol that defines a service that a device can publish or subscribe to.

`struct WSubscribableService`

A service your app discovers on remote devices and can connect to.

`struct WAPublishableService`

A service, hosted by your app, that remote devices can connect to.

Paired devices

`struct WAPairedDevice`

A known Wi-Fi Aware device that your app can connect to.

`typealias Devices`

A dictionary holding a snapshot of currently paired devices accessible and known to your app.

`struct DevicesSequence`

A sequence that vends updates to a paired device list, as the list changes.

`struct PairingInfo`

A collection of unauthenticated information the system receives from a device before it's paired for the first time.

Subscriber

`struct WSubscriberBrowser`

The structure that configures a network browser to subscribe to a Wi-Fi Aware service and make outgoing connections to paired devices.

`struct Action`

The structure that configures the Wi-Fi Aware subscriber operation the network browser performs.

`struct Devices`

The structure that determines the devices to connect to.

Publisher

`struct WAPublisherListener`

Configures a network listener to publish a service over Wi-Fi Aware and accept incoming connections from paired devices.

`struct Action`

The structure that configures the Wi-Fi Aware publisher operation that the network listener performs.

`struct Devices`

The structure that determines the devices to connect to.

`struct DatapathParameters`

The parameter that sets the initial Wi-Fi Aware data path configuration for any devices that are connected.

Parameters

`final class NWParameters`

An object that stores the protocols to use for connections, options for sending data, and network path constraints.

`struct NWParametersBuilder<Top, each P> where Top : NetworkProtocolOptions, repeat each P : NetworkProtocolOptions`

An opaque class that is responsible for creating and configuring NWParameters based on the parameterized protocol stack.

`struct WAParameters`

Parameters configuring a Wi-Fi Aware data path connection.

Connections

`struct WAEndpoint`

The endpoint of a Wi-Fi Aware connection.

Connection performance

`struct NWPath`

An object that contains information about the properties of the network that a connection uses, or that are available to your app.

`struct WAPath`

A representation of the current Wi-Fi Aware path.

`enum WAPerformanceMode`

The performance mode that indicates what performance criterion to prioritize.

`enum WAAccessCategory`

The underlying quality-of-service (QoS) the Wi-Fi layer uses to transmit data packets from a connection over the air.

`struct WAPerformanceReport`

The current performance state of the data path.

Errors

`enum NSError`

The errors returned by objects in the Network framework.

`enum WLError`

An error in Wi-Fi Aware.