Sample Code

Building a custom peer-to-peer protocol

Use networking frameworks to create a custom protocol for playing a game across iOS, iPadOS, watchOS, and tvOS devices.

Download

iOS 16.0+ | iPadOS 16.0+ | tvOS 16.0+ | watchOS 9.0+ | Xcode 15.0+

Overview

This TicTacToe sample code project creates a networked game that you can play between different devices, communicating with a custom protocol. The game offers two ways to play:

- On Apple TV, the game uses DeviceDiscoveryUI to discover nearby iOS, iPadOS, and watchOS devices. After connecting, you can use your device to play against an AI opponent on Apple TV.
- On iOS and iPadOS devices, the game uses Bonjour and TLS to establish secure connections between nearby devices. You can use this mode to play a peer-to-peer two-player game.

> **Note**
>
> This sample code project is associated with WWDC22 session 110339: Build device-to-device interactions with the Network framework. It's also associated with WWDC 2020 session 10110: Support local network privacy in your app and with WWDC 2019 session 713: Advances in Networking, Part 2.

See Also

Network Protocols

`class` `NWProtocolTCP`

A network protocol for connections that use the Transmission Control Protocol.

`class` `NWProtocolTLS`

A network protocol for connections that use Transport Layer Security.

`class` `NWProtocolQUIC`

A network protocol for connections that use the QUIC transport protocol.

`class` `NWProtocolUDP`

A network protocol for connections that use the User Datagram Protocol.

`class` `NWProtocolIP`

A network protocol for configuring the Internet Protocol on connections.

`class` `NWProtocolWebSocket`

A network protocol for connections that use WebSocket.

`class` `NWProtocolFramer`

A customizable network protocol for defining application message parsers.