iOS Network Signal Strength

⚠ This thread has been locked by a moderator.

This issue has cropped up *many* times here on DevForums. Someone recently opened a DTS tech support incident about it, and I used that as an opportunity to post a definitive response here.

If you have questions or comments about this, start a new thread and tag it with *Network* so that I see it.

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—
Quinn "The Eskimo!" @ Developer Technical Support @ Apple

```
let myEmail = "eskimo" + "1" + "@" + "apple.com"
```

iOS Network Signal Strength

The iOS SDK has no general-purpose API that returns Wi-Fi or cellular signal strength in real time. Given that this has been the case for more than 10 years, it's safe to assume that it's not an accidental omission but a deliberate design choice.

For information about the Wi-Fi APIs that *are* available on iOS, see TN3111 [iOS Wi-Fi API overview](#).

Network performance

Most folks who ask about this are trying to use the signal strength to estimate network performance. This is a technique that I specifically recommend against. That's because it produces both false positives and false negatives:

- The network signal might be weak and yet your app has excellent connectivity. For example, an iOS device on stage at WWDC might have terrible WWAN and Wi-Fi signal but that doesn't matter because it's connected to the Ethernet.
- The network signal might be strong and yet your app has very poor connectivity. For example, if you're on a train, Wi-Fi signal might be strong in each carriage but the overall connection to the Internet is poor because it's provided by a single over-stretched WWAN.

The only good way to determine whether connectivity is good is to run a network request and see how it performs. If you're issuing a lot of requests, use the performance of those requests to build a running estimate of how well the network is doing. Indeed, Apple practices what we preach here: This is exactly how HTTP Live Streaming works.

Keep in mind that network performance can change from moment to moment. The user's train might enter or leave a tunnel, the user might walk into a lift, and so on. If you build code to estimate the network performance, make sure it reacts to such changes.

But what about this code I found on the 'net?

Over the years various folks have used various unsupported techniques to get around this limitation. If you find code on the 'net that, say, uses KVC to read undocumented properties, or grovels through system logs, or walks the view hierarchy of the status bar, don't use it. Such techniques are unsupported and, assuming they haven't broken yet, are likely to break in the future.

But what about Hotspot Helper?

[Hotspot Helper](#) *does* have an API to read Wi-Fi signal strength, namely, the `signalStrength` property. However, this is not a general-purpose API. Like the rest of Hotspot Helper, this is tied to the specific use case for which it was designed. This value only updates in real time for networks that your hotspot helper is managing, as indicated by the `isChosenHelper` property.

But what about MetricKit?

MetricKit is *so* cool. Amongst other things, it supports the `MXCellularConditionMetric` [payload](#), which holds a summary of the cellular conditions while your app was running. However, this is *not* a real-time signal strength value.

But what if I'm working for a carrier?

This post is about APIs in the iOS SDK. If you're working for a carrier, discuss your requirements with your carrier's contact at Apple.

Network

Reply   Posted 6 days ago by eskimo

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