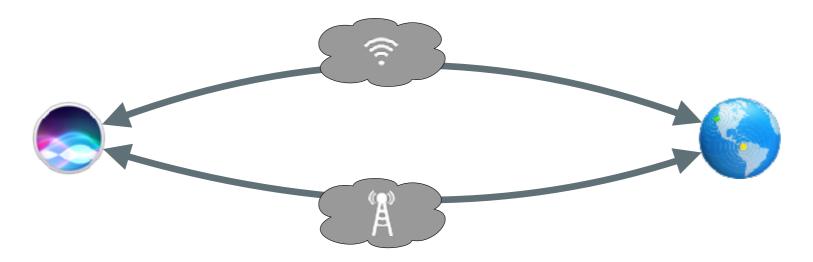# iOS & Linux Implementation Updates

Christoph Paasch <cpaasch@apple.com>

MPTCP at Apple
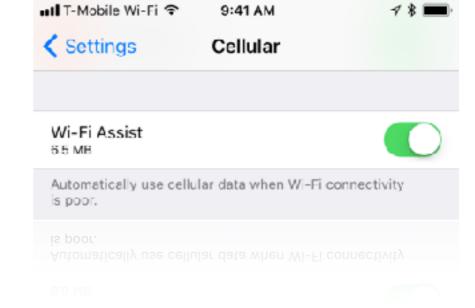
- Implemented since iOS 7 for Siri

User-feedback (Time-to-First-Word) 20% faster in the 95th percentile

5x reduction of network failures

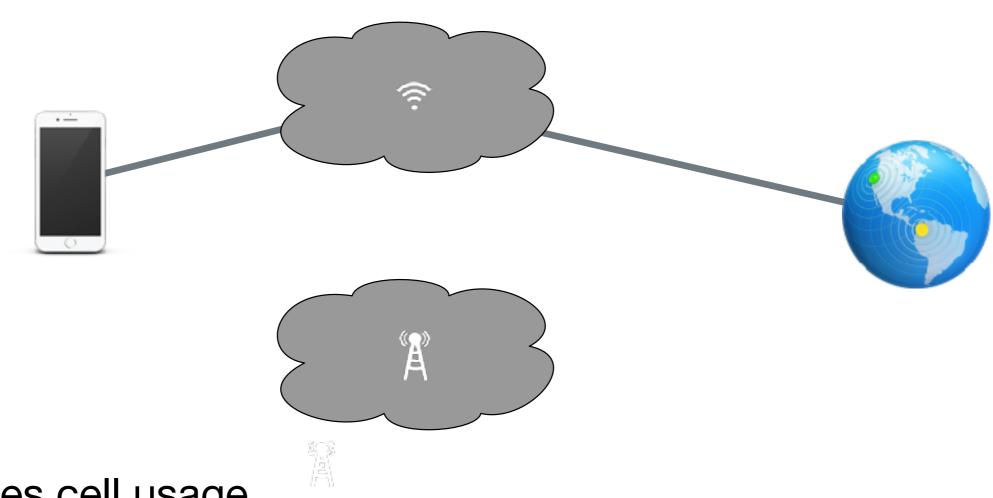# Wi-Fi Assist

- Triggered by:

  - Marginal Wi-Fi

- "Fittest Wins Out" contest between Wi-Fi and Cell

  - Wi-Fi has head-start over Cell

  - On a flow by flow basis, at flow setup time
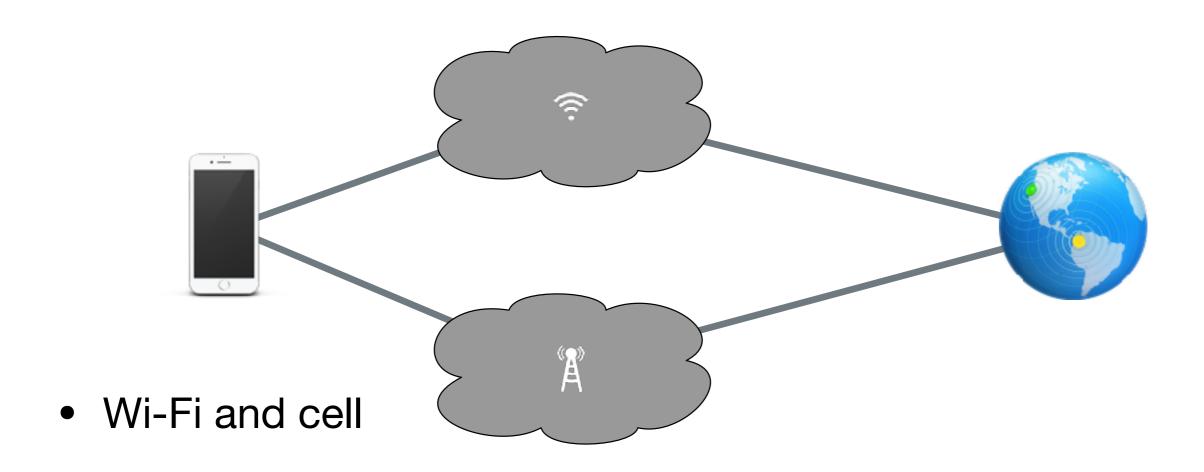
MPTCP in iOS 11

- Open MPTCP API to third party developers

  - Handover Mode

  - Interactive Mode

  - Aggregation Mode (only for developers)

- Part of Wi-Fi Assist triggers

Handover Mode

- Minimizes cell usage

- Provides reliability

- For persistent connections

Interactive Mode

- Wi-Fi and cell

- Minimizes latency

- For latency-sensitive, low-volume flows

Aggregation Mode

- Resource pooling

- Only for developers

- Looking for good use-cases

iOS 11 API

Exposed as URLSessionConfiguration property

```
var multipathServiceType: URLSessionConfiguration.MultipathServiceType

    none = 0,   /* None – no multipath (default) */
    handover = 1, /* Handover */
    interactive = 2, /* Interactive */
    aggregate = 3, /* Aggregation */
```

Linux implementation

- MPTCP v0.92 (released June 4th)

  - Based on v4.4.x

  - New socket-options

    - MPTCP_SCHEDULER, MPTCP_PATH_MANAGER

  - Recover timed-out subflows

  - MPTCP_INFO for details about subflows

- Visit https://multipath-tcp.org