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# Introduction to Apple HomeKit, its Markets and the Ecosystem

Craig Babcock

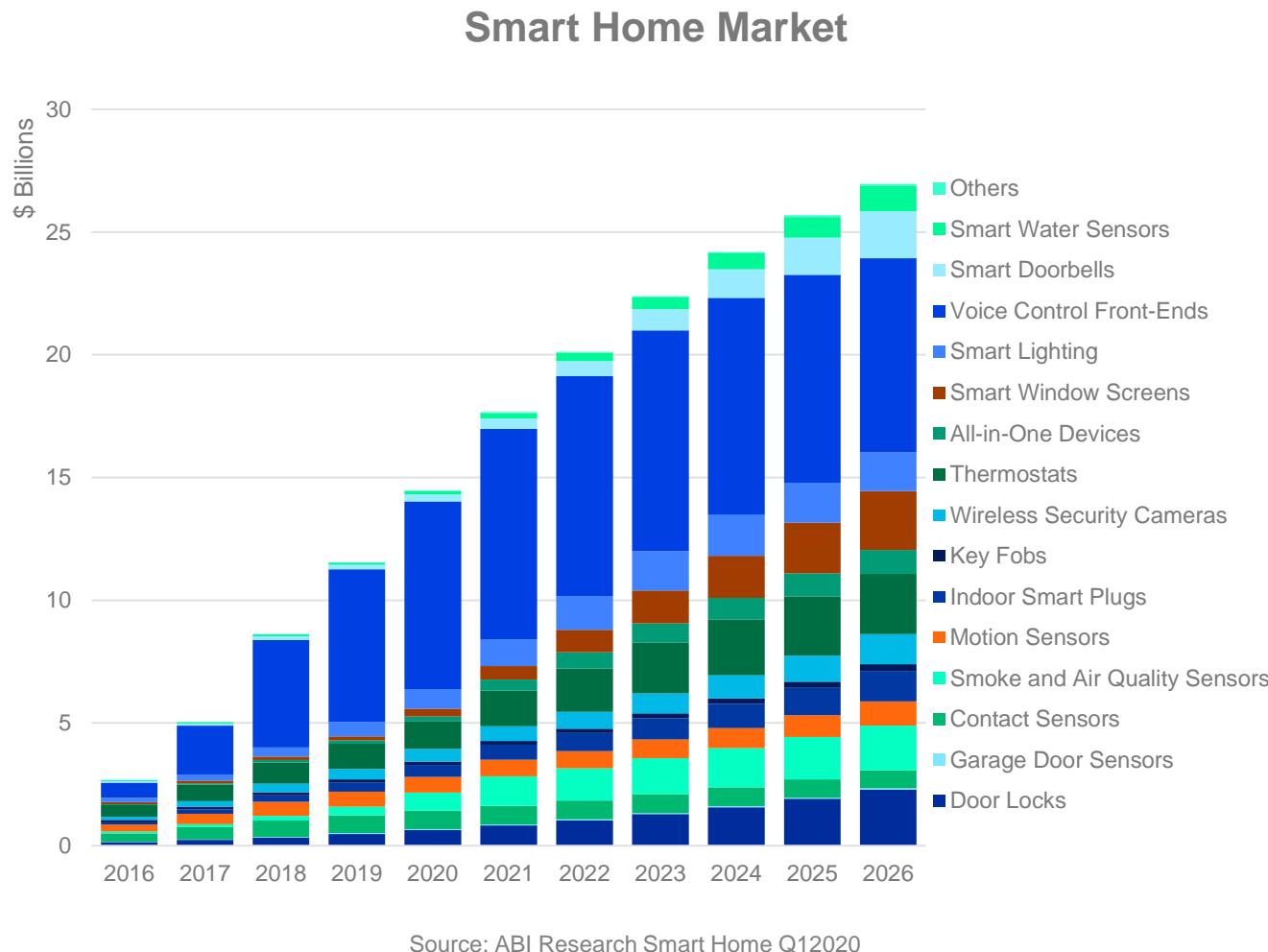


# Agenda



- **The Smart Home Market**
- **What is HomeKit**
- **New Features & Capabilities**
- **Why use HomeKit?**
- **Silicon Labs HomeKit Support**
- **How to Get Started**

# The Smart Home Market



- Market growing at 26% CAGR between 2016-26
- Voice control front ends lead
- Smart Door Locks, Window Screens & Thermostats are the top 3 accessory categories

# The Key Driver: Smart Home Ecosystem



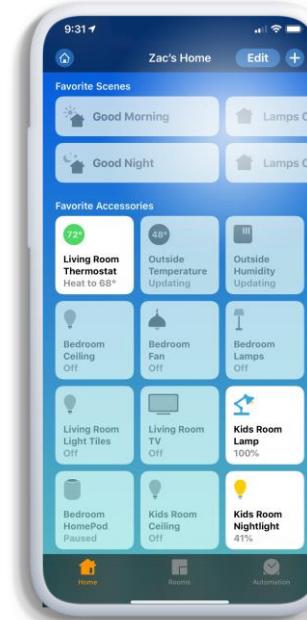
**Stand Alone**

Confusion and Fragmentation



**Ecosystem**

Unification and Clarity



**Simplified App with  
One User Experience**



## HomeKit – Apple's Smart Home Ecosystem

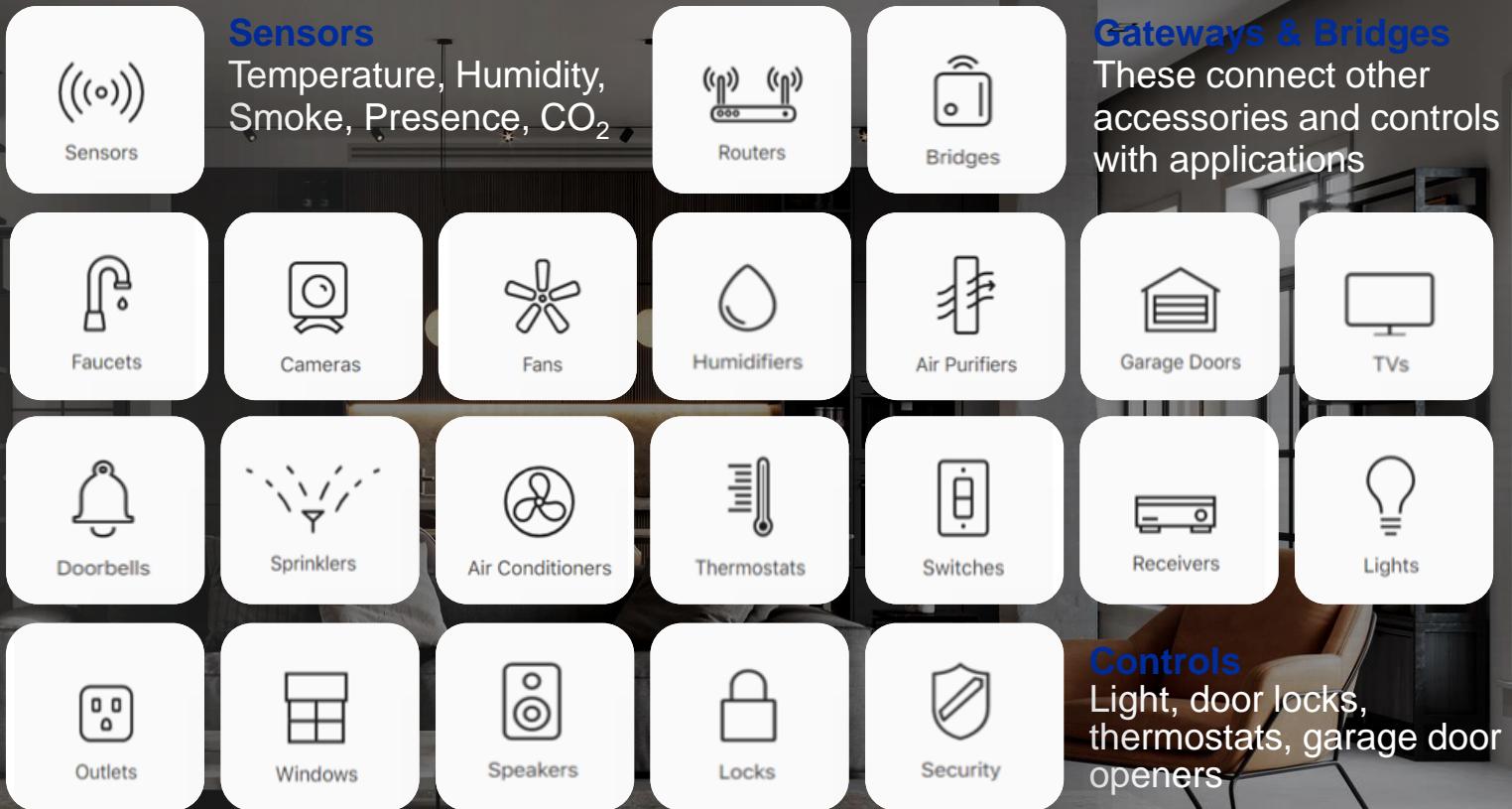
HomeKit enables you to communicate with, configure, and control home automation accessories from multiple vendors to present a coherent, user-focused interface

[Learn more >](#)

# The World of HomeKit Accessories



**>30  
DEVICE TYPES  
CAN BE BUILT  
WITH HOMEKIT  
TODAY**



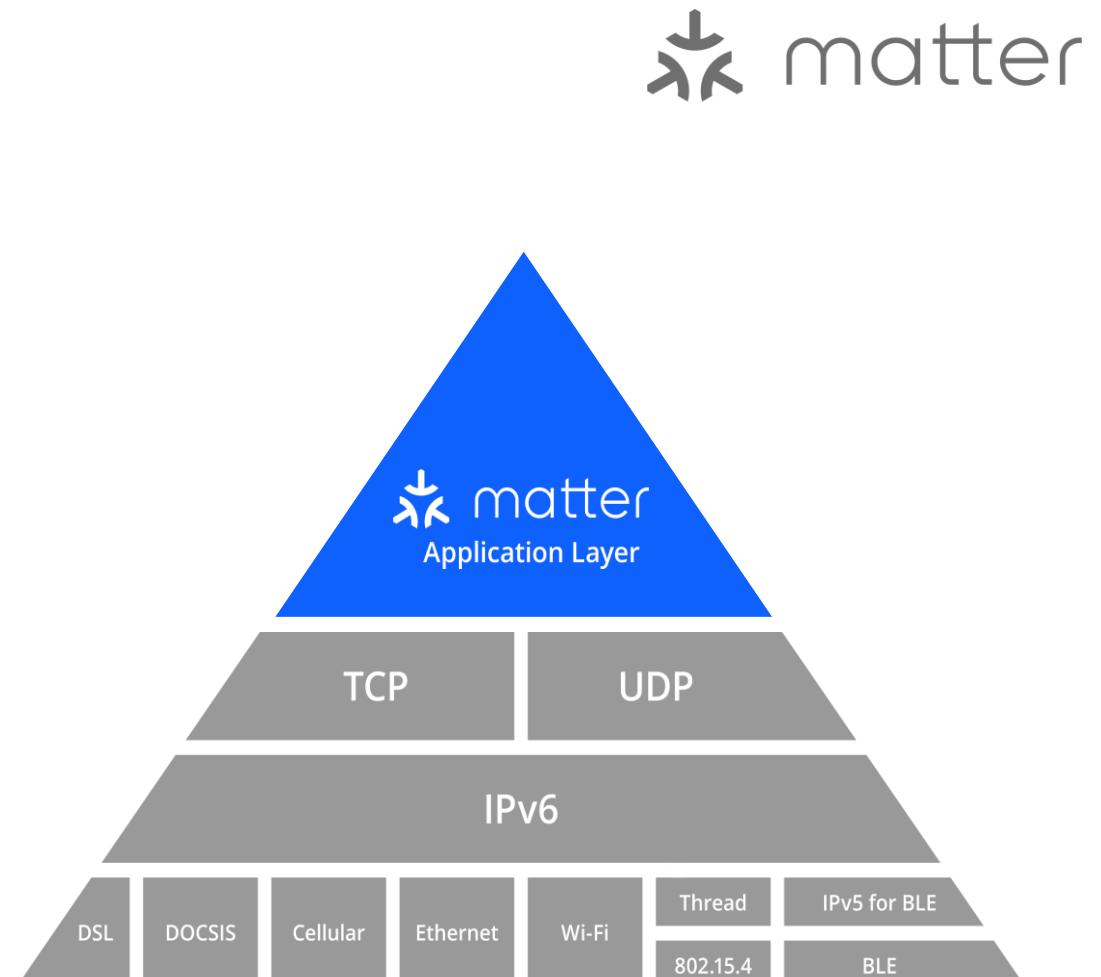
## Gateways & Bridges

These connect other accessories and controls with applications

## Controls

Light, door locks,  
thermostats, garage door  
openers

# What's New? - HomeKit over Thread



# Why Develop with HomeKit?

Powerful  
Ecosystem

Many consumer  
trusted devices

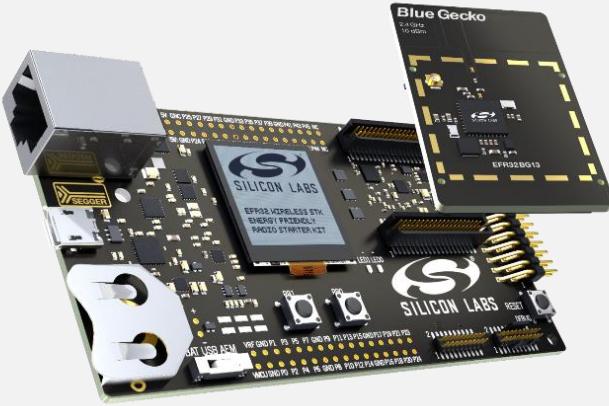
Thread & BLE

Matter via  
HomeKit



# Silicon Labs Solutions for Apple HomeKit

## MULTIPROTOCOL SOCS AND MODULES



A platform of multiprotocol SoC and modules with different price and feature points

Easy migration within the portfolio

## STACKS AND SDKS



Lightbulb Accessory



HomeKit Accessory Protocol (HAP)



Platform Abstraction Layer(PAL)



OpenThread & Bluetooth LE

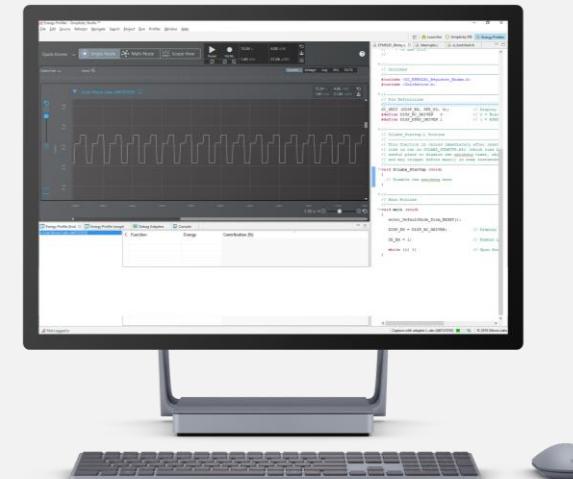


Gecko SDK Platform

## Robust stacks and Gecko SDK integration

SDK and tools for operating systems and toolchains

## DEVELOPMENT TOOLS



Free-of-charge development and protocol analysis tools to boost productivity

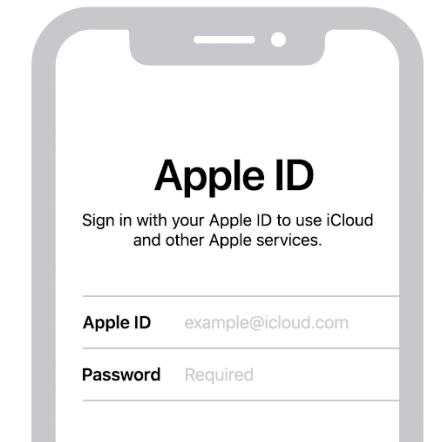
# EFR32 Silicon Supporting Apple HomeKit

CHOICE OF SILICON TO MEET VARIED NEEDS OF ACCESSORIES

	EFR32xG12	EFR32xG13	EFR32xG21
Freq. Bands	2.4 GHz, Sub-GHz, Dual Band	2.4 GHz, Sub-GHz, Dual Band	2.4 GHz
Core	Cortex-M4 (38.4 MHz)	Cortex-M4 (38.4 MHz)	Cortex-M33 (80 MHz)
Max Flash	1024 kB	512 kB	1024 kB
Max RAM	256 kB	64 kB	96 kB
Security	Hardware Crypto (AES 128/256, SHA and ECC), TRNG	Hardware Crypto (AES 128/256, SHA and ECC), TRNG	Enhanced Crypto, Debug Access Control, Secure Element
RX Sensitivity (802.15.4)	-102.7 dBm	-102.7 dBm	-104.5 dBm
RX Sensitivity (BLE 1 Mbps)	-94.8 dBm	-94.8 dBm	-97.5 dBm
RX Sensitivity (38.4 kbps GFSK 868 MHz)	-109.5 dBm	-109.5 dBm	N/A
Active Current	88 µA/MHz	87 µA/MHz	63.8 µA/MHz
Sleep Current (EM2, 16 kB ret)	1.5 µA	1.3 µA	4.5 µA
TX Current @ +0 dBm (2.4 GHz)	9.5 mA	9.5 mA	9.3 mA
TX Current @ +10 dBm (2.4 GHz)	34 mA	34 mA	33.8 mA
TX Current @ +20 dBm (2.4 GHz)	131 mA	131 mA	185 mA
TX Current @ +20 dBm (868 MHz)	79.7 mA	79.7 mA	N/A
RX Current (802.15.4)	11 mA	10.3 mA	9.4 mA
RX Current (BLE 1 Mbps)	10.0 mA	9.5 mA	8.8 mA
RX Current (38.4 kbps GFSK 868 MHz)	8.6 mA	8.6 mA	N/A
Operating Voltage	1.8 V to 3.8 V	1.8 V to 3.8 V	1.71 V to 3.8 V
GPIO	31, 46, 65	16, 31	20
Package	7x7 QFN48 7x7 BGA125 8x8 QFN68	5x5 QFN32 7x7 QFN48	4x4 QFN32

# Getting Started on Accessory Development

## HOBBYISTS AND MAKERS



Non-Commercial Version

Requires Apple ID & signing up

[support.apple.com/en-us/HT204316](https://support.apple.com/en-us/HT204316)

Access to

[HomeKit Accessory Protocol Specification](#)

[HomeKit Open Source ADK](#)

## ACCESSORY MANUFACTURERS



Must enroll in MFi Program

<https://mfi.apple.com/>  
**HomeKit Accessory Protocol Specification**

Commercial version

Third-party SDKs for commercial development

Silicon Labs is a popular provider of HomeKit SDK

Works with Apple HomeKit Certification and tools

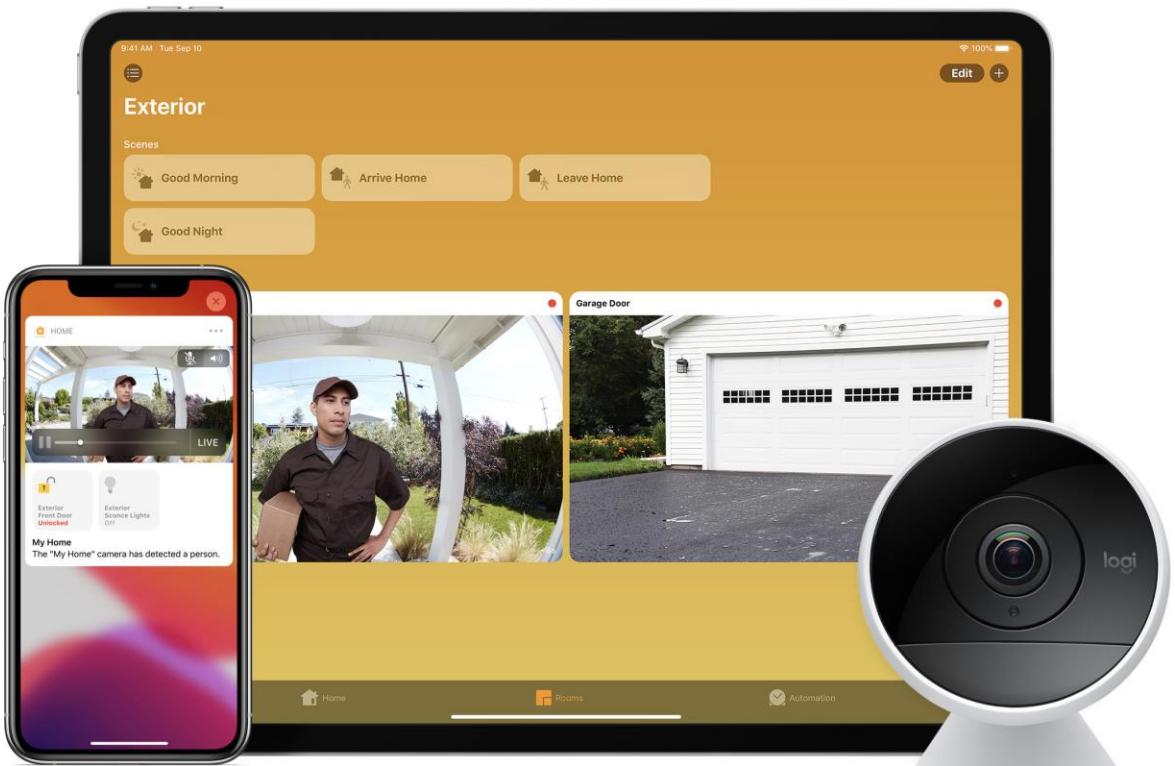
HomeKit Accessory Tester  
HomeKit Certification Assistant  
HomeKit Accessory Simulator



works with



# Apple HomeKit Product Compliance



Works with  
**Apple HomeKit**

Photo: Apple Inc.

- **Final HomeKit products must be approved by Apple**
- **Official Silicon Labs Apple HomeKit compliant software releases have:**
  - Been tested against the HomeKit Accessory Tester (HAT)
  - Been tested against HomeKit Certification Assistant (HCA)
  - Passed the HomeKit Self-Certification Test cases
  - A Bluetooth QDID
  - Gone through the Apple Adjunct review
- **This simplifies and speeds up the approval process of the final end product**
- **Contact your MFI representative via [MFI portal](#) for details about HomeKit product compliance**

# Quick Links

<b>Introduction to Silicon Labs Solution for Apple HomeKit.</b> <b>Request access for HomeKit SDK also from here.</b>	<a href="http://www.silabs.com/products/development-tools/software/bluetooth-software-for-apple-homekit">www.silabs.com/products/development-tools/software/bluetooth-software-for-apple-homekit</a>
<b>HomeKit Deep Dive</b>	<a href="http://www.developer.apple.com/videos/play/wwdc2018/231/">www.developer.apple.com/videos/play/wwdc2018/231/</a>
<b>Matter Support in smart home apps</b>	<a href="https://developer.apple.com/videos/play/wwdc2021/10298/">https://developer.apple.com/videos/play/wwdc2021/10298/</a>
<b>Signing up for MFi Program</b>	<a href="http://www.developer.apple.com/programs/mfi/">www.developer.apple.com/programs/mfi/</a>
<b>Signing up for Apple ID</b>	<a href="http://www.support.apple.com/en-us/HT204316">www.support.apple.com/en-us/HT204316</a>
<b>HomeKit Accessory Protocol Specification</b> Non Commercial Version	<a href="http://www.developer.apple.com/homekit/specification">www.developer.apple.com/homekit/specification</a>
<b>HomeKit Open Source ADK</b> Non Commercial version	<a href="http://www.github.com/apple/HomeKitADK">www.github.com/apple/HomeKitADK</a>
<b>HomeKit enabled products' list</b>	<a href="http://www.apple.com/shop/accessories/all-accessories/homekit">www.apple.com/shop/accessories/all-accessories/homekit</a>
<b>HomeKit developer guide</b>	<a href="http://www.developer.apple.com/documentation/homekit">www.developer.apple.com/documentation/homekit</a>
<b>Set up and use the Home app</b>	<a href="http://www.support.apple.com/en-us/HT204893">www.support.apple.com/en-us/HT204893</a>

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