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iPhone

The **iPhone** is a line of smartphones designed and marketed by Apple Inc. that use Apple's iOS mobile operating system. The first-generation iPhone was announced by then-Apple CEO Steve Jobs on January 9, 2007. Since then, Apple has annually released new iPhone models and iOS updates. As of November 1, 2018, more than 2.2 billion iPhones had been sold.

The iPhone has a user interface built around a multi-touch screen. It connects to cellular networks or Wi-Fi, and can make calls, browse the web, take pictures, play music and send and receive emails and text messages. Since the iPhone's launch further features have been added, including larger screen sizes, shooting video, waterproofing, the ability to install third-party mobile apps through an app store, and many accessibility features. Up to iPhone 8 and 8 Plus, iPhones used a layout with a single button on the front panel that returns the user to the home screen. Since iPhone X, iPhone models have switched to a nearly bezel-less front screen design with app switching activated by gesture recognition.

The iPhone is one of the two largest smartphone platforms in the world alongside Android, forming a large part of the luxury market. The iPhone has generated large profits for Apple, making it one of the world's most valuable publicly traded companies. The first-generation iPhone was described as "revolutionary" and a "game-changer" for the mobile phone industry and subsequent models have also garnered praise. The iPhone has been credited with popularizing the smartphone and slate form factor, and with creating a large market for smartphone apps, or "app economy". As of January 2017, Apple's App Store contained more than 2.2 million applications for the iPhone.

iPhone

The front face of an iPhone 13 Pro in Sierra Blue

Developer	Apple Inc.
Manufacturer	Foxconn, Pegatron, Wistron (contract manufacturers)
Type	Smartphone
Release date	Depends on model **1st**: June 29, 2007 **3G:** July 11, 2008 **3GS**: June 19, 2009 **4**: June 24, 2010 **4S**: October 14, 2011 **5**: September 21, 2012 **5C**, **5S**: September 20, 2013 **6 / 6 Plus**: September 19, 2014 **6S / 6S Plus**: September 25, 2015 **SE (1st)**: March 31, 2016 **7 / 7 Plus**: September 16, 2016 **8 / 8 Plus**: September 22, 2017 **X**: November 3, 2017

Contents

History and availability

Development of what was to become the iPhone began in 2004, when Apple started to gather a team of 1,000 employees led by hardware engineer Tony Fadell, software engineer Scott Forstall and design engineer Sir Jonathan Ive[15] to work on the highly confidential "Project Purple".[16][17]

Apple CEO Steve Jobs steered the original focus away from a tablet (which Apple eventually revisited in the form of the iPad) towards a phone.[18] Apple created the device during a secretive collaboration with Cingular Wireless (which became AT&T Mobility) at the time—at an estimated development cost of US$150 million over thirty months.[19]

According to Steve Jobs, the "i" word in "iMac" (and therefore "iPod", "iPhone" and "iPad") stands for internet, individual, instruct, inform, and inspire.[20][21]

Apple rejected the "design by committee" approach that had yielded the Motorola ROKR E1, a largely unsuccessful collaboration with Motorola. Among other deficiencies, the ROKR E1's firmware limited storage to only 100 iTunes songs to avoid competing with Apple's iPod nano.[22][23]

Cingular gave Apple the liberty to develop the iPhone's hardware and software in-house[24][25] and even paid Apple a fraction of its monthly service revenue (until the iPhone 3G),[26] in exchange for four years of exclusive U.S. sales, until 2011.[27]

Jobs unveiled the iPhone to the public on January 9, 2007, at the Macworld 2007 convention at the Moscone Center in San Francisco.[28] The two initial models, a 4 GB[a] model priced at US$499 and an 8 GB model at US$599 (both requiring a two-year contract), went on sale in the United States on June 29, 2007, at 6:00 pm local time, while hundreds of customers lined up outside the stores nationwide.[29] The passionate reaction to the launch of the iPhone resulted in sections of the media dubbing it the 'Jesus phone'.[30][31] Following this successful release in the US, the first generation iPhone was made available in the UK, France, and Germany in November 2007, and Ireland and Austria in the spring of 2008.

On July 11, 2008, Apple released the iPhone 3G in twenty-two countries, including the original six.[32] Apple released the iPhone 3G in upwards of eighty countries and territories.[33] Apple announced the iPhone 3GS on June 8, 2009, along with plans to release it later in June, July, and August, starting with the US, Canada and major European countries on June 19. Many would-be users objected to the iPhone's cost,[34] and 40% of users had household incomes over US$100,000.[35]

The back of the original first-generation iPhone was made of aluminum with a black plastic accent. The iPhone 3G and 3GS feature a full plastic back to increase the strength of the GSM signal.[36] The iPhone 3G was available in an 8 GB black model, or a black or white option for the 16 GB model. The iPhone 3GS was available in both colors, regardless of storage capacity.

	XS / XS Max: September 21, 2018
	XR: October 26, 2018
	11 / 11 Pro / 11 Pro Max: September 20, 2019
	SE (2nd): April 24, 2020
	12 and **12 Pro**: October 23, 2020
	12 Mini and **12 Pro Max**: November 13, 2020
	13, **13 Mini**, **13 Pro**, and **13 Pro Max**: September 24, 2021
Discontinued	Depends on model
	1st: June 9, 2008
	3G: August 9, 2010
	3GS: September 12, 2012
	4: September 10, 2013
	4S: September 9, 2014
	5: September 10, 2013
	5C: September 9, 2015
	5S: March 21, 2016
	6 / 6 Plus: September 7, 2016
	6S / 6S Plus: September 12, 2018
	SE (1st): September 12, 2018
	7 / 7 Plus: September 10, 2019
	8 / 8 Plus: April 15, 2020
	X: September 12, 2018
	XS / XS Max: September 10, 2019
	XR: September 14, 2021
	11 Pro / 11 Pro Max: October 13, 2020
	12 Pro, **12 Pro Max**: September 14, 2021
Units sold	2.2 billion (as of November 1, 2018)[1]
Operating system	iOS
System on a chip	Chips used
	1st gen and **3G:** S5L8900
	3GS: S5PC100
	4: Apple A4
	4S: Apple A5

The iPhone 4 has an aluminosilicate glass front and back with a stainless steel edge that serves as the antennas. It was at first available in black; the white version was announced, but not released until April 2011, 10 months later.

Users of the iPhone 4 reported dropped/disconnected telephone calls when holding their phones in a certain way. This became known as antennagate.[37]

On January 11, 2011, Verizon announced during a media event that it had reached an agreement with Apple and would begin selling a CDMA iPhone 4. Verizon said it would be available for pre-order on February 3, with a release set for February 10.[38][39] In February 2011, the Verizon iPhone accounted for 4.5% of all iPhone ad impressions in the U.S. on Millennial Media's mobile ad network.[40]

From 2007 to 2011, Apple spent $647 million on advertising for the iPhone in the US.[17]

On September 27, Apple sent invitations for a press event to be held October 4, 2011, at 10:00 am at the Cupertino headquarters to announce details of the next generation iPhone, which turned out to be iPhone 4S. Over 1 million 4S models were sold in the first 24 hours after its release in October 2011.[41] Due to large volumes of the iPhone being manufactured and its high selling price, Apple became the largest mobile handset vendor in the world by revenue, in 2011, surpassing long-time leader Nokia.[42] American carrier C Spire Wireless announced that it would be carrying the iPhone 4S on October 19, 2011.[43]

In January 2012, Apple reported its best quarterly earnings ever, with 53% of its revenue coming from the sale of 37 million iPhones, at an average selling price of nearly $660. The average selling price has remained fairly constant for most of the phone's lifespan, hovering between $622 and $660.[44] The production price of the iPhone 4S was estimated by IHS iSuppli, in October 2011, to be $188, $207 and $245, for the 16 GB, 32 GB and 64 GB models, respectively.[45] Labor costs are estimated at between $12.50 and $30 per unit, with workers on the iPhone assembly line making $1.78 an hour.[46]

In February 2012, ComScore reported that 12.4% of U.S. mobile subscribers used an iPhone.[47] By 2009, approximately 6.4 million iPhones were active in the U.S. alone.[35]

On September 12, 2012, Apple announced the iPhone 5. It has a 4 inches (100 mm) display, up from its predecessors' 3.5 inches (89 mm) screen. The device comes with the same 326 pixels per inch found in the iPhone 4 and 4S. The iPhone 5 has the SoC A6 processor, the chip is 22% smaller than the iPhone 4S' A5 and is twice as fast, doubling the graphics performance of its predecessor. The device is 18% thinner than the iPhone 4S, measuring 7.6 millimetres (0.3 in), and is 20% lighter at 112 grams (4 oz).

On July 6, 2013, it was reported that Apple was in talks with Korean mobile carrier SK Telecom to release the next generation iPhone with LTE Advanced technology.[48]

On July 22, 2013, the company's suppliers said that Apple is testing out larger screens for the iPhone and iPad. "Apple has asked for prototype smartphone screens larger than 4 inches (100 mm) and has also asked for screen designs for a new tablet device measuring slightly less than 13 inches (330 mm) diagonally, they said."[49]

On September 10, 2013, Apple unveiled two new iPhone models during a press event in Cupertino. The iPhone 5C, a mid-range-priced version of the handset that is designed to increase accessibility due to its price is available in five colors (green, blue, yellow, pink, and white) and is made of plastic. The iPhone 5S comes in three colors (black, white, and gold) and the home button is replaced with a fingerprint scanner (Touch ID). Both phones shipped on September 20, 2013.[50]

On September 9, 2014, Apple revealed the iPhone 6 and the iPhone 6 Plus at an event in Cupertino. Both devices had a larger screen than their predecessor, at 4.7 inches (120 mm) and 5.5 inches (140 mm) respectively.[51]

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5 / 5C: Apple A6

5S: Apple A7

6 / 6 Plus: Apple A8

6S / 6S Plus and **SE (1st):** Apple A9

7 / 7 Plus: Apple A10 Fusion

8 / 8 Plus / X: Apple A11 Bionic

XR / XS / XS Max: Apple A12 Bionic

11 / 11 Pro / 11 Pro Max and **SE (2nd):** Apple A13 Bionic

12 / 12 mini / 12 Pro / 12 Pro Max: Apple A14 Bionic

13 / 13 mini / 13 Pro / 13 Pro Max: Apple A15 Bionic

CPU	CPU

1st gen and **3G:** Samsung 32-bit RISC ARM 1176JZ(F)-S v1.0[2]

3GS: 600 MHz ARM Cortex-A8[3]

4: 800 MHz ARM Cortex-A8[4]

4S: 800 MHz dual-core ARM Cortex-A9[5]

5 / 5C: 1.3 GHz dual-core Apple A6

5S: 1.3 GHz 64-bit dual-core Apple A7

6 / 6 Plus: 1.4 GHz 64-bit dual-core Apple A8

6S / 6S Plus and **SE (1st):** 1.85 GHz 64-bit dual-core Apple A9

7 / 7 Plus: 2.34 GHz 64-bit quad-core Apple A10 Fusion (2× Hurricane + 2× Zephyr)[6]

8 / 8 Plus / X: 2.39 GHz 64-bit hexa-core Apple A11 Bionic (2× Monsoon + 4× Mistral)

XR / XS / XS Max: 2.49 64-bit hexa-core Apple A12 Bionic

11 / 11 Pro / 11 Pro Max

After the iPhone 6 and 6 Plus was released, some users started complaining about the 6 and 6 Plus bending from normal use. This trend became known as "Bendgate",[52] which later started "Touch Disease." However, they released the iPhone 6S and 6S Plus, a more bend-resistant iPhone than the 6 and 6 Plus, to solve this issue.

On September 7, 2016, Apple unveiled the iPhone 7 and 7 Plus, which added water and dust resistance, improved system and graphics performance, a new dual-camera setup on the Plus model, new color options, and featured the removal of the 3.5 mm headphone jack from the iPhone.[53]

On September 12, 2017, Apple officially unveiled the iPhone 8 and 8 Plus, which features a new glass design, camera improvements, a True Tone display, wireless charging, and improved system performance. It also unveiled the iPhone X, which features a near bezel-less design, a facial recognition feature dubbed "Face ID" with facial tracking used for Animojis, an OLED screen with the highest pixel density on an iPhone, a new telephoto lens which works better in low light conditions, and improved cameras for AR.[54]

On September 12, 2018, Apple officially unveiled the iPhone XS, XS Max[55] and XR[56] at the Steve Jobs theater at Apple Park. The XS and XS Max feature an improved Super Retina Display with Dolby Vision and HDR10 support with the XS Max featuring a larger 6.5 inches (170 mm) display, improved cameras with Smart HDR, and the A12 Bionic chip. The iPhone XS and XS Max are IP68 water, liquid, and dust resistant which allow the devices to be submerged in up to 2 meters for a duration of 30 minutes, while iPhone XR retained the IP67 certification found in the first-generation iPhone X and also features an IPS LCD display instead of the OLED displays found in the higher-end models. The iPhone XS/XS Max's IP68 certifications were tested using various liquids such as chlorinated-water, saltwater, tea, wine, beer, and juices. Apple also announced the fourth generation of Apple Watch, the Apple Watch Series 4.

On September 10, 2019, Apple officially unveiled the iPhone 11 at Steve Jobs Theater,[57][58][59] along with the iPhone 11 Pro and the iPhone 11 Pro Max. All models gained a ultra-wide lens, allowing for a wider field of view. The Pro models gained a triple-lens camera arrangement, and a matte glass finish.[60][61][59]

The iPhone 12 and 12 Pro series were virtually announced on October 13, 2020, featuring a refreshed design, Super Retina XDR Displays across all models, and 5G connectivity. All models also feature MagSafe, allowing special magnetic accessories to easily snap on and off, while also allowing 15W wireless charging.[62][63]

The iPhone 13 and 13 Pro series were virtually announced on September 14, 2021, featuring improved cameras with sensor-shift stabilization for all models, a diagonal camera arrangement for the 13 and 13 mini, significantly larger camera sensors and an adaptive 120 Hz ProMotion display for the Pro models. All models also gained a battery size increase, and a reduction in width of the TrueDepth camera module.[64][65]

Production

Up to the iPhone 4, all iPhones and other iOS devices were manufactured by Foxconn, based in Taiwan. In 2011, new CEO Tim Cook changed Apple's manufacturing strategy to diversify its suppliers. The iPhone 4s in 2012 was the first model to be manufactured simultaneously by two stand-alone companies: Foxconn and Pegatron, the latter also based in Taiwan. Although Foxconn still produces more iPhones, Pegatron's orders have been slowly increased: the company made part of the iPhone 5C line in 2013, and 30% of iPhone 6 devices in 2014. The 6 Plus model was produced solely by Foxconn.[66] In 2019, Apple investigated reports that some Foxconn managers had used rejected parts to build iPhones.[67] In India, Apple pays Wistron, a Taiwan-based manufacturer with a plant near Bangalore, to assemble iPhones to sell in the region.[68]

Models

34 iPhone models have been produced. The models in **bold** are devices of the latest generation:

	and **SE (2nd):** 2.65 64-bit hexa-core Apple A13 Bionic **12 Mini / 12 / 12 Pro / 12 Pro Max:** 3.10 64-bit hexa-core Apple A14 Bionic **13 Mini / 13 / 13 Pro / 13 Pro Max:** 3.23 64-bit hexa-core Apple A15 Bionic
Memory	**Memory** **1st gen** and **3G:** 128 MB LPDDR RAM (137 MHz) **3GS:** 256 MB LPDDR RAM (200 MHz) **4:** 512 MB LPDDR2 RAM (200 MHz) **4S:** 512 MB LPDDR2 RAM **5 / 5C:** 1 GB LPDDR2 RAM **5S** and **6 / 6 Plus:** 1 GB LPDDR3 RAM **6S / 6S Plus, SE (1st)** and **7:** 2 GB LPDDR4 RAM **8:** 2 GB LPDDR4X RAM **7 Plus**: 3 GB LPDDR4 RAM **8 Plus, X, XR** and **SE (2nd):** 3 GB LPDDR4X RAM **XS, XS Max, 11, 11 Pro, 11 Pro Max, 12, 12 Mini, 13, 13 Mini:** 4 GB LPDDR4X RAM **12 Pro, 12 Pro Max, 13 Pro, 13 Pro Max:** 6 GB LPDDR4X RAM
Storage	4, 8, 16, 32, 64, 128, 256, 512 GB or 1 TB[a] flash memory[7]
Display	**Display** **1st gen** and **3G:** 3.5 in (89 mm) 3:2 aspect ratio, scratch-resistant[8] glossy glass covered screen, 262,144-color (18-bit) TN LCD, 480 × 320 px (HVGA) at 163 ppi, 200:1 contrast

Current devices

- [iPhone 11](#) (2019–present)
- [iPhone 12](#) (2020–present)
- [iPhone 12](#) Mini (2020–present)
- **iPhone 13** (2021–present)
- **iPhone 13 Mini** (2021–present)
- **iPhone 13 Pro** (2021–present)
- **iPhone 13 Pro Max** (2021–present)
- **iPhone SE (3rd)** (2022–present)

Past devices

- [iPhone](#) (2007–2008)
- [iPhone 3G](#) (2008–2010)
- [iPhone 3GS](#) (2009–2012)
- [iPhone 4](#) (2010–2013)
- [iPhone 4S](#) (2011–2014)
- [iPhone 5](#) (2012–2013)
- [iPhone 5C](#) (2013–2015)
- [iPhone 5S](#) (2013–2016)
- [iPhone 6](#) (2014–2016)
- [iPhone 6 Plus](#) (2014–2016)
- [iPhone 6S](#) (2015–2018)
- [iPhone 6S Plus](#) (2015–2018)
- [iPhone SE (1st)](#) (2016–2018)
- [iPhone 7](#) (2016–2019)
- [iPhone 7 Plus](#) (2016–2019)
- [iPhone 8](#) (2017–2020)
- [iPhone 8 Plus](#) (2017–2020)
- [iPhone X](#) (2017–2018)
- [iPhone XR](#) (2018–2021)
- [iPhone XS](#) (2018–2019)
- [iPhone XS Max](#) (2018–2019)
- [iPhone 11 Pro](#) (2019–2020)
- [iPhone 11 Pro Max](#) (2019–2020)
- [iPhone SE (2nd)](#) (2020–2022)
- [iPhone 12 Pro](#) (2020–2021)
- [iPhone 12 Pro](#) Max (2020–2021)

ratio

3GS:

In addition to prior, features a fingerprint-resistant [oleophobic](#) coating,[9] and 262,144-color (18-bit) TN LCD with hardware spatial dithering[10]

4 and **4S:**

3.5 in (89 mm); 3:2 aspect ratio, [aluminosilicate](#) glass covered 16,777,216-color (24-bit) [IPS](#) LCD screen, 960 × 640 px at 326 [ppi](#), 800:1 contrast ratio, 500 $^{cd}/_{m^2}$ max brightness

5 / 5C / 5S / SE (1st):

4.0 in (100 mm); 16:9 aspect ratio; 1136 × 640 px screen resolution at 326 ppi

6 / 6S / 7 / 8 / SE (2nd):

4.7 in (120 mm); 16:9 aspect ratio; 1334 × 750 px screen resolution at 326 ppi

6 Plus / 6S Plus / 7 Plus / 8 Plus:

5.5 in (140 mm); 16:9 aspect ratio; 1920 × 1080 px screen resolution at 401 ppi

X / XS / 11 Pro:

5.8 in (150 mm); ≈19.5:9 aspect ratio; OLED screen, 2436 × 1125 px screen resolution at 458 ppi

XS Max / 11 Pro Max:

6.5 in (170 mm); ≈19.5:9 aspect ratio; OLED screen, 2688 × 1242 px screen resolution at 458 ppi

XR / 11:

6.1 in (150 mm); ≈19.5:9 aspect ratio; 1792 × 828 px screen resolution at 326 ppi

12 mini / 13 mini:

5.4 in (140 mm); ≈19.5:9

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