**MacOS X 10.7**

**History**

Mac OS X Lion (version 10.7; marketed as Mac OS X 10.7 Lion) is the eighth major release of Mac OS X, Apple's desktop and server operating system for Macintosh computers.

A preview of Mac OS X 10.7 Lion was publicly unveiled at the "Back to the Mac" Apple Special Event on October 20, 2010. It brought many developments made in Apple's iOS, such as an easily navigable display of installed applications, to the Mac, and includes support for the Mac App Store, as introduced in Mac OS X Snow Leopard version 10.6.6. On February 24, 2011, the first developer's preview of Lion (11A390) was released to subscribers to the Apple Developer program. Other developer previews were subsequently released, with Lion Preview 4 (11A480b) being released at WWDC 2011.

Lion was released to manufacturing on July 1, 2011, followed by its final release via the Mac App Store on July 20, 2011. Apple reported over one million Lion sales on the first day of its release. As of October 2011, Mac OS X Lion had sold over six million copies worldwide.

**Function and features**

Some new features were announced at the "Back to the Mac" keynote in October 2010, and the Apple website was updated in February 2011, with more details. Other features were announced at the WWDC 2011 keynote or on Apple's Mac OS X Lion Web site after the keynote. Apple states that there are over 250 new or changed features in Lion, including:

* Address Book uses an iPad-like user interface. It also includes improved Yahoo support and FaceTime calling.
* AirDrop – Lion-to-Lion direct file sharing via Wi-Fi Direct. No wireless access point required.
* Address space layout randomization – Address space layout randomization (ASLR), a security technique that puts important data in unpredictable locations, making it harder to target known weaknesses, is available for 32-bit applications, and "has been improved for all applications", in Lion.
* Apple Push Notification Service – Send over-the-air alerts, such as news updates or social networking status changes, using Apple's Push Notification service to applications that support APNS.
* Auto-correction behaves much like on iOS devices, displaying an iOS-like popup box.
* Auto Save – As in iOS, documents in applications written to use Auto Save are saved automatically so users do not have to worry about manually managing their documents.
* Emoji support – Apple has added a new Emoji font commonly used in chat to express ideograms.
* Exposé in the Dock, a way of activating Exposé for a single application from the Dock, a feature added in Mac OS X 10.6, is altered. One must double-tap with two fingers on a dock icon to initiate single application exposé, or simply right-click or control-click and select Show All Windows.
* FaceTime comes bundled with Lion.
* FileVault offers full disk encryption and added security with XTS-AES 128 data encryption. Support for FileVault on external hard drives has also been added.
* Finder improvements – Finder search allows multiple search criteria to be specified without creating a smart folder, Finder search offers suggestions, files can be grouped by various attributes, and one can merge files under two folders with the same name – a prompt appears asking to replace or keep both files.
* Font Book 3—Font Book 3 provides more flexible displays of character glyphs supplied by a particular font face. Duplicate font files are flagged with a warning icon, and can be fixed automatically or resolved manually.
* Full-screen apps – Native, system-wide support for full-screen applications running in their own space. Supporting applications display a new button at the top right of application window, this button opens applications in full-screen mode. However, full screen mode is not supported for dual screen setups.
* High-quality multilingual speech voices – users can download new high-quality voices in more than forty languages and dialects.
* iCal has an updated user interface, an annual view, and support for a full-screen view.
* iChat has support for logging into Yahoo! Messenger. Users can audio- and video-chat with other iChat users using their Yahoo! accounts.
* Languages/Localization – Arabic, Czech, Turkish and Hungarian are added as full system languages, to make the total number of twenty-two languages available in Mac OS X.
* Launchpad – An application launcher that displays an iOS-like icon grid of installed applications. It features the ability to make multiple pages and group apps into folders that function the same as folders in iOS.
* Mac App Store – An application store built in the image of the iOS App Store. Like in iOS, it provides ways for shoppers to discover apps, one-click installation of apps, and one-click updates of all or selected installed applications.
* Mail 5 – Uses an iPad-like user interface, has a full screen-optimized view, uses chronological "Conversations" to organize messages, and supports Exchange 2010.
* Mission Control replaces the "All windows" Exposé feature. It gives an overview of all running applications just like "All windows" but groups windows from the same application. At the top of the screen it gives quick access to the Dashboard, Spaces, and running full-screen applications.
* Multi-touch gestures – Similar to iOS, additional gestures performed using a multi-touch input device (e.g. Magic Mouse, Magic Trackpad) allow the user to scroll, swipe to different pages, and enter Mission Control. While this is not the first official multi-touch support for Mac OS X, it has been expanded; other frameworks, such as Lux, have already created multi-touch support.
* Multi-User Screen Sharing—The built-in Screen Sharing feature allows remote users to log in to a separate user account from the one that is currently logged in. That means that while one user is logged into a machine, a second user can log in to the same machine remotely, seeing their own desktop and user environment.
* Preview gains several features, including full-screen support and the ability to sign a document just by holding a signed piece of paper up to the camera.
* Profile Manager provides several features, including push notification-based management of OS X Lion and above.
* QuickTime re-incorporates some features from QuickTime Pro. New features cited include Copy/Paste, Insert Clip, Crop Video, Rotate Video, Resize, Trim, and more Export options.
* Recovery Partition – Apple has introduced a recovery partition that includes utilities generally found on the OS X discs. This partition permits the user to restore their computer to its original factory state. It also allows for a new copy of OS X Lion to be installed over the internet.
* Resume – Applications resume in the same state when re-opened as already seen in iOS.
* Safari – With full-screen mode and the new WebKit2 layout engine.
* System Information – This feature is a re-design of System Profiler, which has been completely altered with new views which display graphical information on displays, storage devices, memory usage along with other hardware information. The previous layout remains available by clicking "System Report". Early builds of Lion also used System Information as a replacement for "About This Mac".
* Terminal has extra features, including full screen mode.
* TextEdit gains a new graphical toolbar with font selection and text highlighting. The new TextEdit also supports Apple's new automatic file saving and versions technologies.
* Versions – Time Machine-like saving and browsing of past versions of documents for applications written to use Versions.
* Vertical text – Lion supports vertical layouts for East Asian languages.
* The complete list was on Apple's website but has since been taken down; it can now be found on the Internet Archive. The developer release notes may also be of interest.

**System requirements**

* x86-64 CPU (64-bit Macs, with an Intel Core 2 Duo, Intel Core i5, Intel Core i7, or Xeon processor.)
* At least 2 GB of memory
* Mac OS X 10.6.6 or later (Mac OS X 10.6.8 is recommended)
* 7 GB of available space
* AirDrop is supported on the following Mac models: MacBook Pro (late 2008 or newer), MacBook Air (late 2010 or newer), MacBook (late 2008 or newer), iMac (early 2009 or newer), Mac Mini (mid-2010 or newer), Mac Pro (early 2009 with AirPort Extreme card and mid-2010 or newer).

**Advantages**

1. Simple but powerful user interface: Both macOS and Windows have easy-to-use graphical user interface or GUI. But OS X offers a more straightforward approach to computing. Those who are accustomed with the GUI of iOS found in iPhone and iPad will find macOS somewhat familiar.

2. Fewer viruses and other security issues: One of the advantages of macOS is that it is considerably safer than Windows. Of course, some Apple loyalists would argue that Macs are completely invincible from viruses or malware. This is no longer true.

3. Seamless integration between OS and hardware: Apple is both a software developer and a device manufacturer. This means that they have optimised the macOS to work seamlessly with all of the hardware components of a Mac device. It also ensures that all hardware components work hand-in-hand.

4. Comes preloaded with productivity apps: Standard Windows OS usually does not come with Microsoft Office Suite. Both are sold separately most of the time. In addition, new Windows-based laptop and desktop computers come with random software or apps that merely bloat the entire system and external storage.

5. Effective and unparalleled multitasking feature: Multitasking is another notable advantage of macOS. Mac computers have hardware specifications designed for multitasking. And because macOS integrates seamlessly with Mac hardware components, the overall operation is smooth and responsive.

6. Integration with other Apple products: One of the strengths of Apple is that most of the products under the brand are completely integrated. The iPhone or iPad works best with a Mac computer. This advantage of macOS is exclusive for Apple users—or those individuals with several Apple devices.

**Disadvantages**

1. Mac computers are considerably expensive: The fact remains that Apple sells expensive computers whether it is the new MacBook Pro with Retina or a Mac Mini. This is more noticeable when comparing the price point of Mac computers with their Windows counterpart.

2. Inflexible when it comes to hardware upgrades: A standard Mac computer cannot be upgraded easily because most of its hardware components are integrated both at a design and engineering levels. This is a macOS disadvantage that is unacceptable for hobbyists.

3. Lack of game titles and advanced gaming experience: There are more game titles available for Windows than in macOS. This is another noteworthy disadvantage of macOS. Some titles from independent producers that have gained large following are unavailable for Mac computers.

4. App ecosystem is still lacklustre: Windows has more software or applications. Developers, especially small and independent software companies, often consider building software for Windows first because of greater reach.