



A Short History of Operating Systems

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The major eras

- The no-OS era
- Mainframe/midrange-server era
- The personal computing era
- GUI desktop era
- Open source “era”
- Mobile era

The no-OS era

- **until ~1960**
- Earliest computers did not have operating systems.
- Expectations and capabilities were simple enough that OSes weren't needed.
- Many limited-capability modern computers still don't have OSes.
 - Simple remote controls
 - Microwave oven panels

Mainframe/midrange-server era

- **~1960-1975**
- multiuser (with authentication), multitasking
- UNIX (late 1960's)
 - many versions
 - commercial but given away to academic institutions
 - still widely used in research and academia

The personal computing era

- **~1975-1985**
- a.k.a. **microcomputer** era

- single user (no authentication), single tasking
- CLI and menu UI
- CP/M (1974)
- Apple II (1977)
- DOS (1981)
- Commodore 64 (1982), Amiga (1985) ...

GUI desktop era

- **~1985-2010**
- Apple Macintosh (1984)

GUI desktop era

- Microsoft Windows
 - 1.0 (1985), 3.1 (1992): DOS-based
 - Windows NT (1993): UNIX competitor
 - Windows 95 (1995): preemptive multitasking
 - Windows 98 (1998): networking support
 - Windows 2000 (2000): NT evolved
 - Windows XP (2001): true multiuser; Pro, Home versions
 - Windows Vista (2006): gazillions of versions
 - Windows 7 (2009): many versions
 - Windows 8 (2012): one-OS-for-all-platforms, touch-centric
 - Windows 10 (2015)

GUI desktop era

- Apple's Mac OS X / OS X / macOS (2001)
 - Unix-based (Darwin BSD)
- Google's Chrome OS (2011)
 - Linux core hosting Google Chrome and Chrome-based apps.

Open-source alternatives

- **~1991-present**
- Linux (1991)
- BSD UNIX (open versions since ~1991)
- Great for desktop/laptop use.
- Great for servers.

- Linux powers most Web servers

Mobile era

- **~2010 - present**
- Embedded Linux (1991)
- Windows CE/Embedded (1996)
- Palm (1996)
- Symbian (1997)
- BlackBerry OS (1999)
- Windows Mobile (2000)
- iOS (2007)
- Android (2008)

Mobile era

- webOS (2010)
- bada (2010)
- Aliyun (2011)
- Tizen (2012)
- Sailfish OS (2012)
- Firefox OS (c. 2013)
- Ubuntu Touch (2013)

Mobile era

- Android Wear / Wear OS (2014)
- watchOS (2015)
- iPadOS (2019)
- Many small Linux projects

Not covered

- Custom OS for supercomputers, etc.

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