



# 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, 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, single tasking, no authentication
- 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

- 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 OS X (2001)
  - Unix-based (Darwin BSD)
  - Now called macOS

## Open-source alternatives

- **~1991-present**
- Linux (1991)
- BSD UNIX (open versions since ~1991)
- Can be configured for desktop or midrange server (or larger!)
  - Linux powers most Web servers
- Great for desktop/laptop use as well.

## 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)
- iPadOS (2019)
- Many small Linux projects

## Not covered

- Custom OS for supercomputers, etc.

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