

Influential Operating Systems



Now that you understand the fundamental concepts of operating systems (CPU scheduling, memory management, processes, and so on), we are in a position to examine how these concepts have been applied in several older and highly influential operating systems. Some of them (such as the XDS-940 and the THE system) were one-of-a-kind systems; others (such as OS/360) are widely used. The order of presentation highlights the similarities and differences of the systems; it is not strictly chronological or ordered by importance. The serious student of operating systems should be familiar with all these systems.

In the bibliographical notes at the end of the chapter, we include references to further reading about these early systems. The papers, written by the designers of the systems, are important both for their technical content and for their style and flavor.

Bibliographical Notes

Looms and calculators are described in [Frah (2001)] and shown graphically in [Frauenfelder (2005)].

The Manchester Mark 1 is discussed by [Rojas and Hashagen (2000)], and its offspring, the Ferranti Mark 1, is described by [Ceruzzi (1998)].

[Kilburn et al. (1961)] and [Howarth et al. (1961)] examine the Atlas operating system.

The XDS-940 operating system is described by [Lichtenberger and Pirtle (1965)].

The THE operating system is covered by [Dijkstra (1968)] and by [McKeag and Wilson (1976)].

The Venus system is described by [Liskov (1972)].

[Brinch-Hansen (1970)] and [Brinch-Hansen (1973)] discuss the RC 4000 system.

The Compatible Time-Sharing System (CTSS) is presented by [Corbato et al. (1962)].

The MULTICS operating system is described by [Corbato and Vyssotsky (1965)] and [Organick (1972)].

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[Mealy et al. (1966)] presented the IBM/360. [Lett and Konigsford (1968)] cover TSS/360.

CP/67 is described by [Meyer and Seawright (1970)] and [Parmelee et al. (1972)].

DEC VMS is discussed by [Kenah et al. (1988)], and TENEX is described by [Bobrow et al. (1972)].

A description of the Apple Macintosh appears in [Apple (1987)]. For more information on these operating systems and their history, see [Freiberger and Swaine (2000)].

The Mach operating system and its ancestor, the Accent operating system, are described by [Rashid and Robertson (1981)]. Mach's communication system is covered by [Rashid (1986)], [Tevanian et al. (1989)], and [Accetta et al. (1986)]. The Mach scheduler is described in detail by [Tevanian et al. (1987a)] and [Black (1990)]. An early version of the Mach shared-memory and memory-mapping system is presented by [Tevanian et al. (1987b)]. A good resource describing the Mach project can be found at <http://www.cs.cmu.edu/afs/cs/project/mach/public/www/mach.html>.

[McKeag and Wilson (1976)] discuss the MCP operating system for the Burroughs computer family as well as the SCOPE operating system for the CDC 6600.

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