

OPERATING SYSTEM STRUCTURE

Module 1.6

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OS STRUCTURES

- Monolithic systems
- Layered systems
- Micro-kernel systems
- Client-server systems
- Virtual Machines

MONOLITHIC SYSTEMS (1)

Basic structure of OS

1. A main program that invokes the requested service procedure.
2. A set of service procedures that carry out the system calls.
3. A set of utility procedures that help the service procedures.

MONOLITHIC SYSTEMS (2)

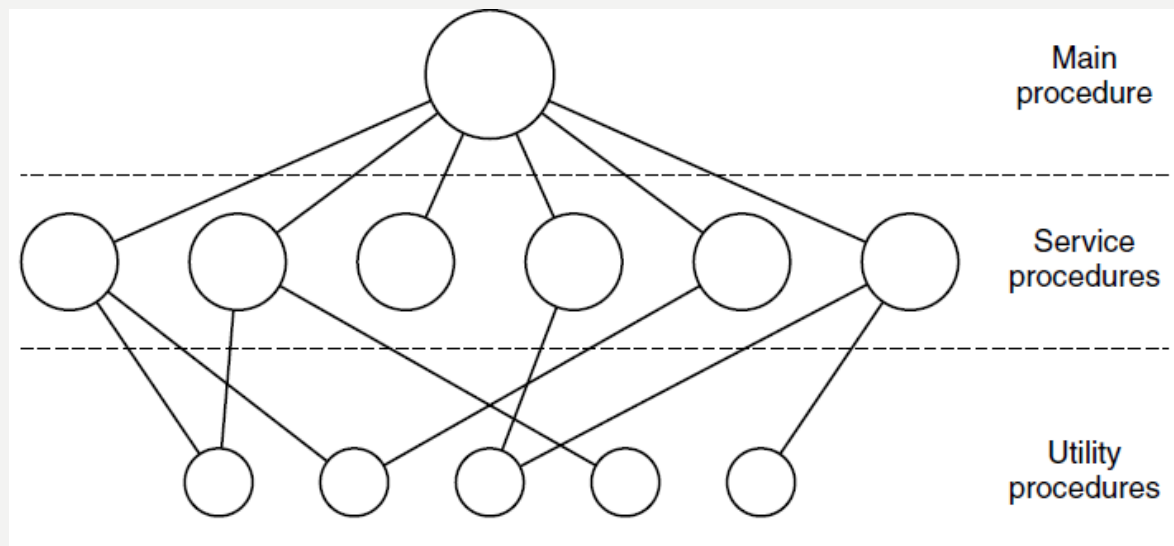


Figure 1-24. A simple structuring model for a monolithic system.

LAYERED SYSTEMS

Layer	Function
5	The operator
4	User programs
3	Input/output management
2	Operator-process communication
1	Memory and drum management
0	Processor allocation and multiprogramming

Figure 1-25. Structure of the THE operating system.

MICROKERNELS

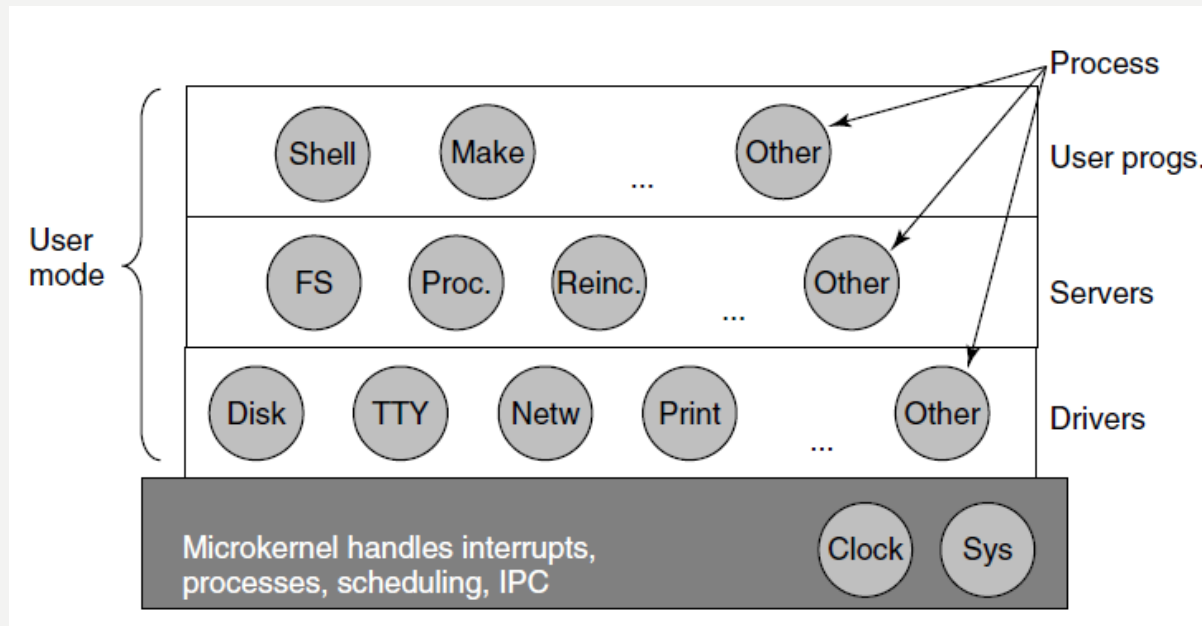


Figure 1-26. Simplified structure of the MINIX 3 system.

CLIENT-SERVER MODEL (1)

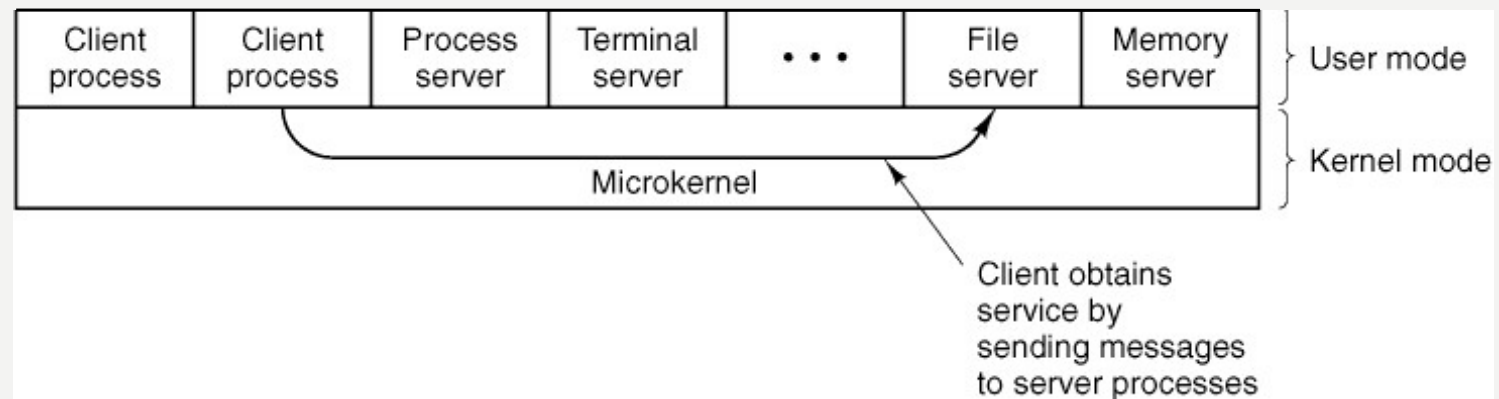


Figure 1-20. The client-server model.

CLIENT-SERVER MODEL (2)

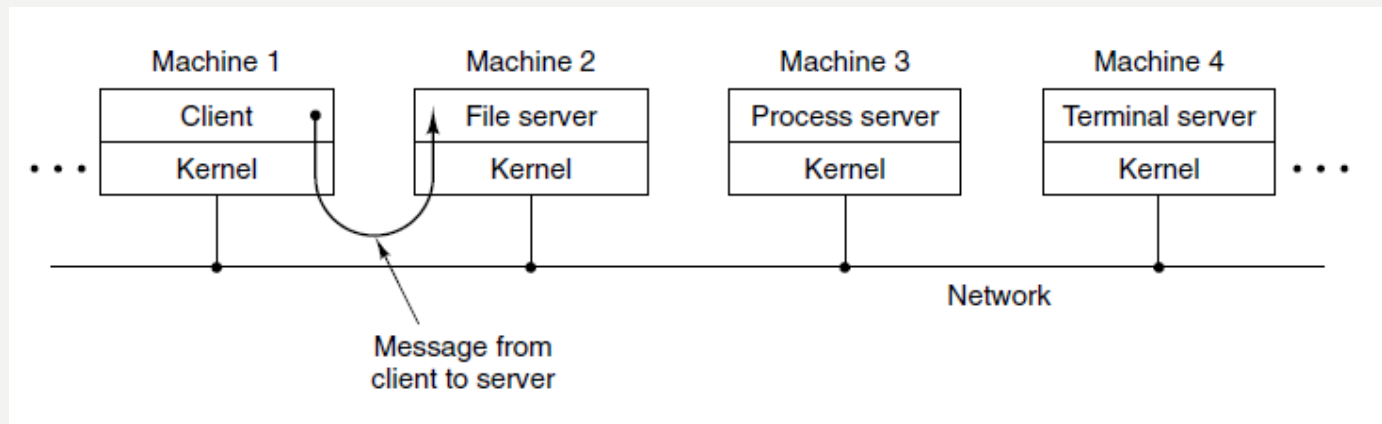
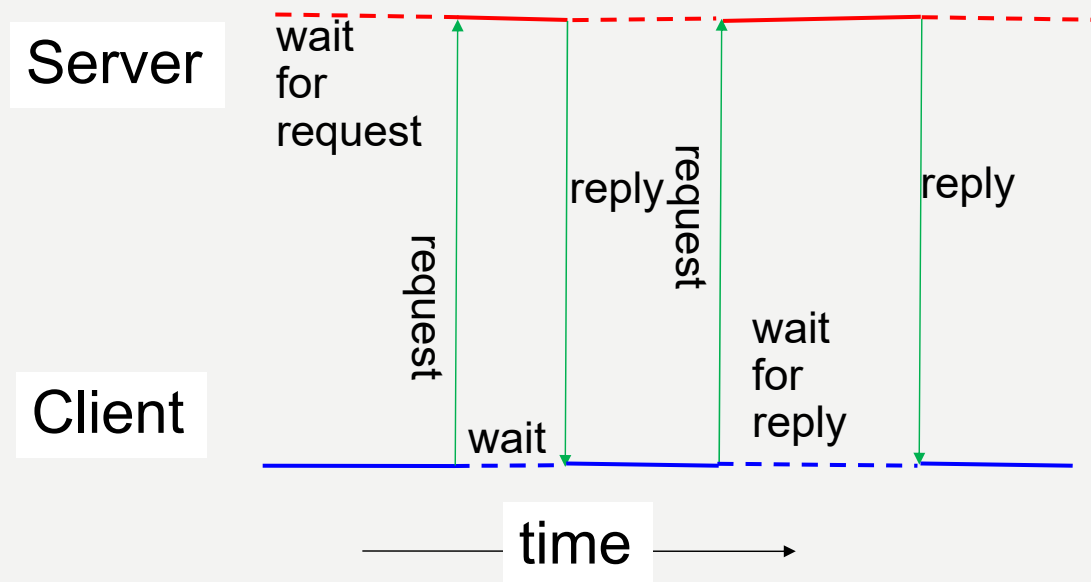


Figure 1-27. The client-server model over a network.

CLIENT-SERVER MODEL (3)



Client-server synchronous communication

VIRTUAL MACHINES

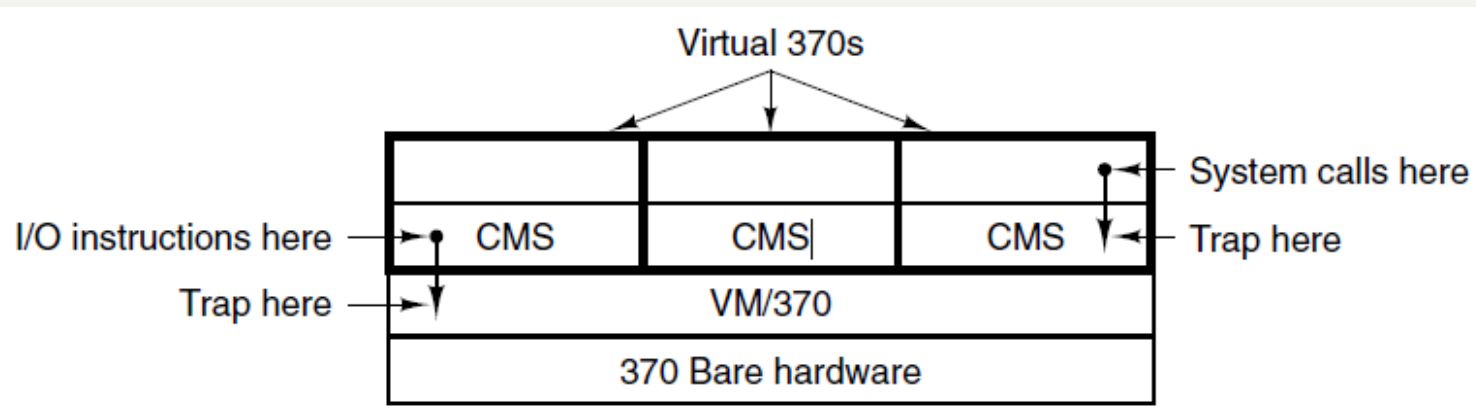


Figure 1-28. The structure of VM/370 with CMS.

VIRTUAL MACHINES REDISCOVERED

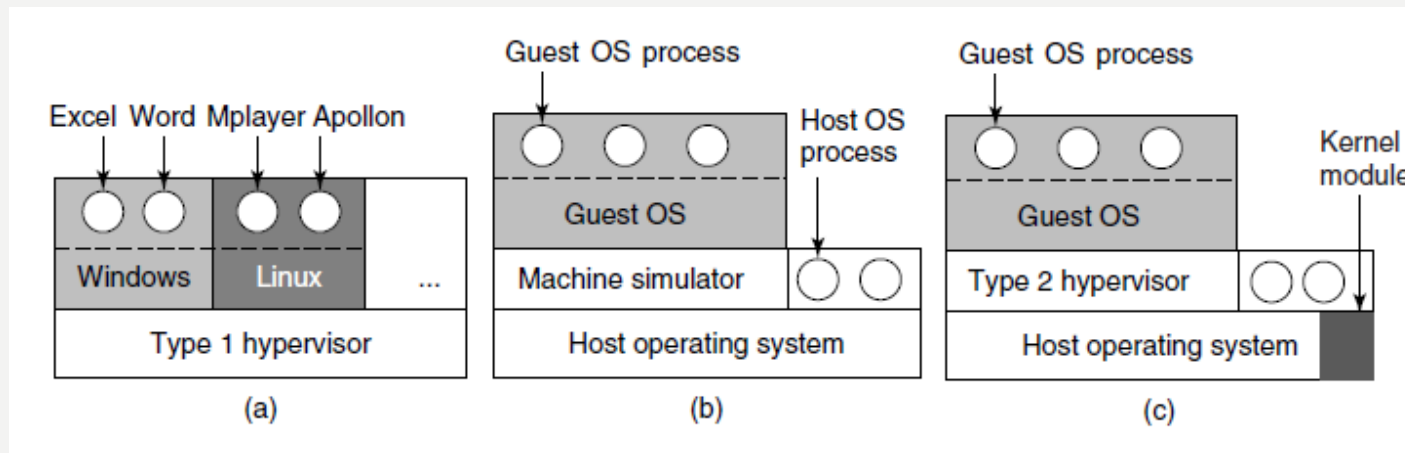


Figure 1-29. (a) A type 1 hypervisor. (b) A pure type 2 hypervisor. (c) A practical type 2 hypervisor.