

Sistemas Operacionais I

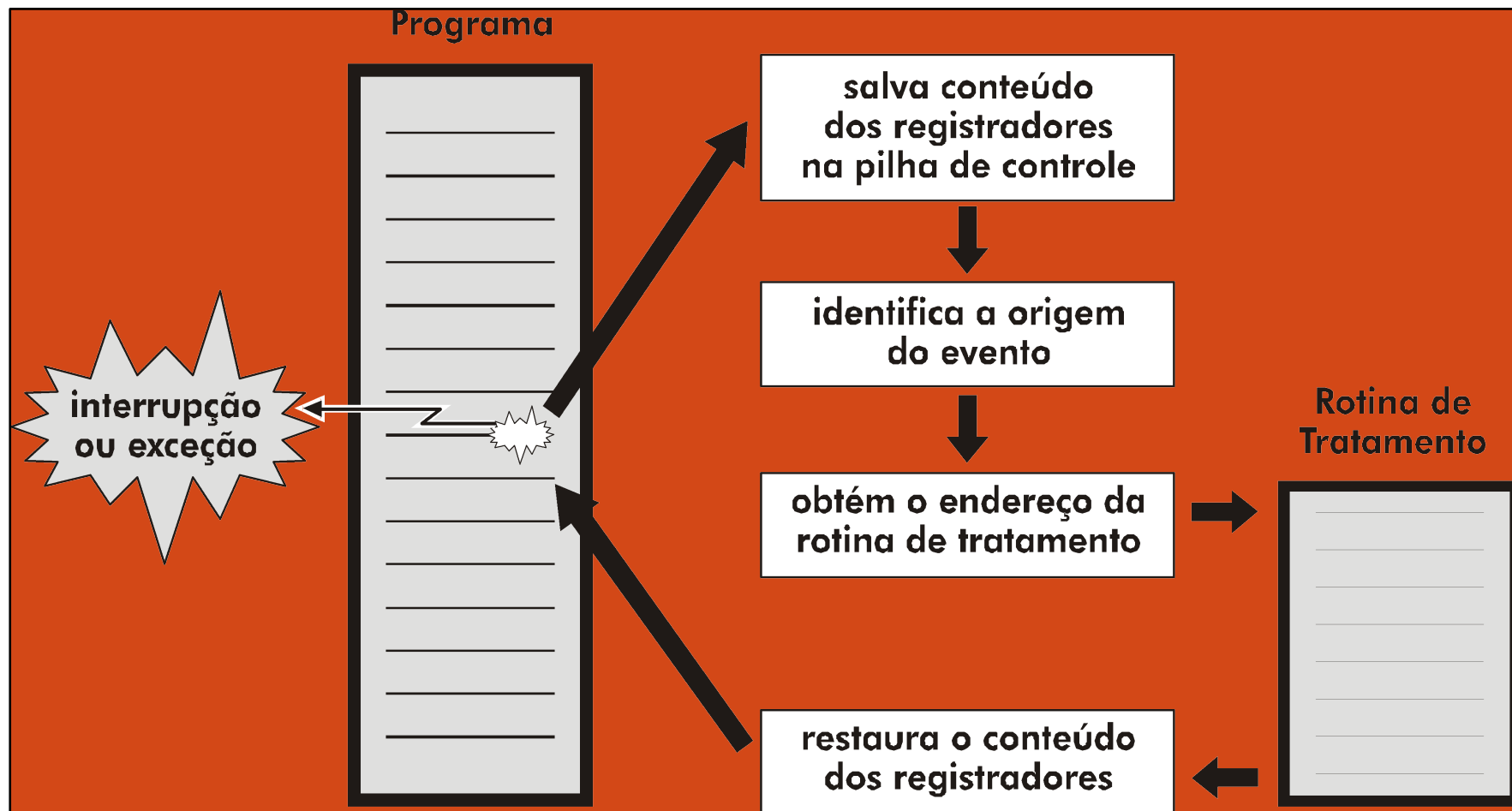
Estruturas do Sistema Operacional

Prof. Leandro Marzulo

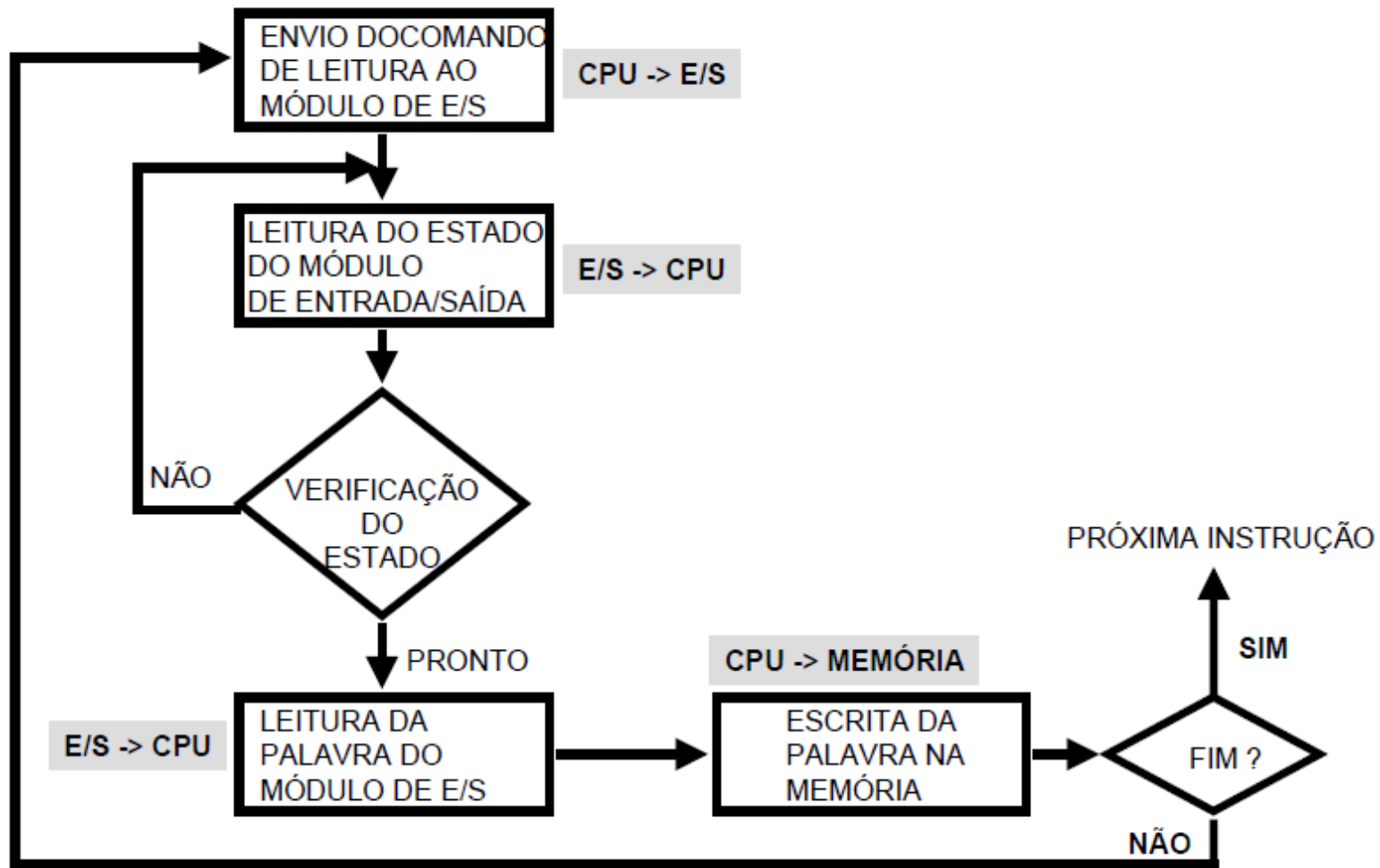
Serviços do Sistema Operacional

- Interface de usuário (GUI e CLI)
- Execução de programas
- Operações de I/O
- Manipulação do sistema de arquivos
- Comunicações
 - Memória compartilhada
 - Troca de Mensagens
- Detecção de erros
- Alocação de Recursos
- Contabilização (estatísticas / responsabilidade)
- Proteção e segurança

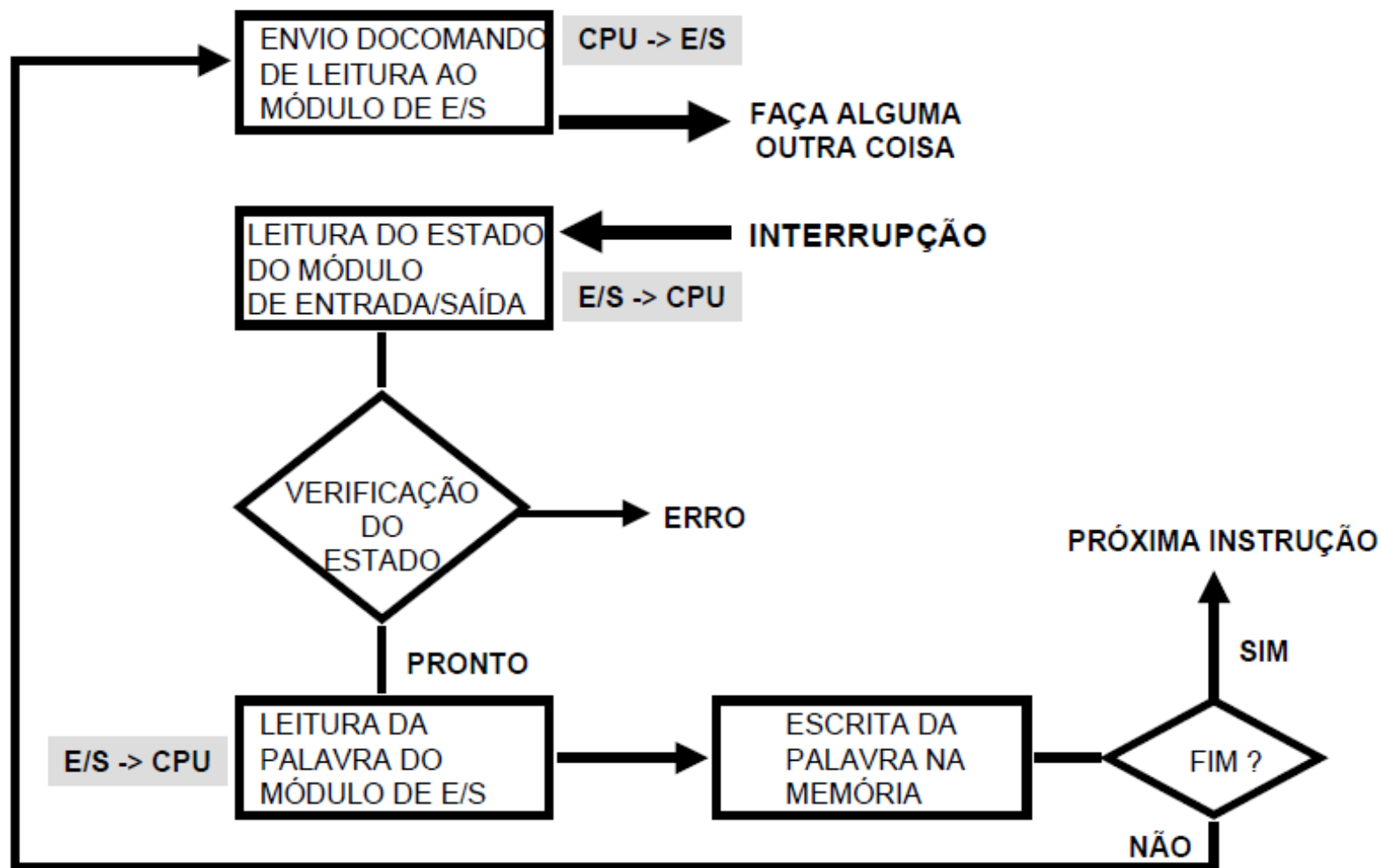
Interrupção e Exceção



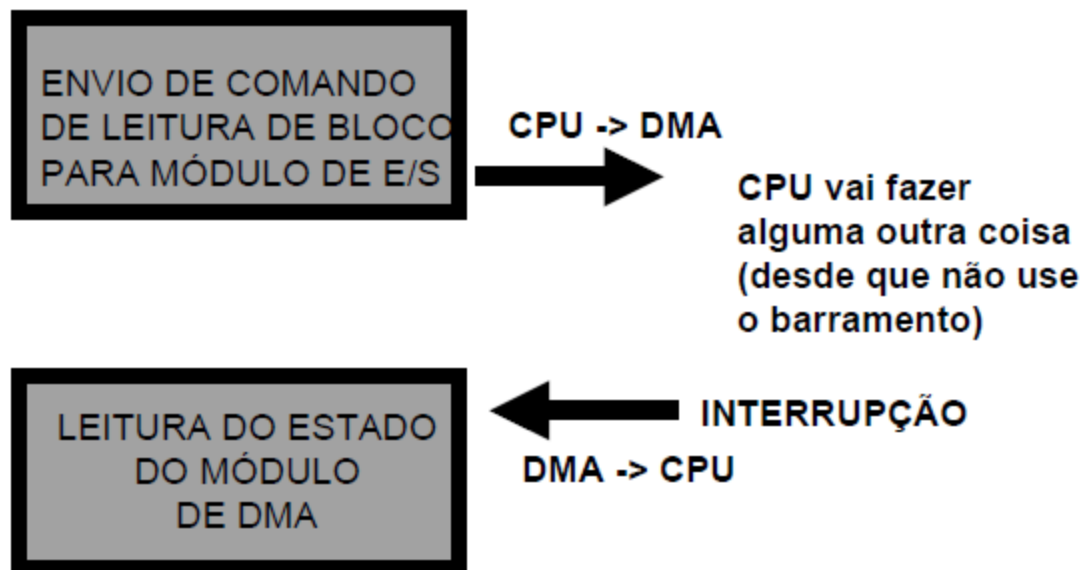
I/O – Programado (espera ocupada)



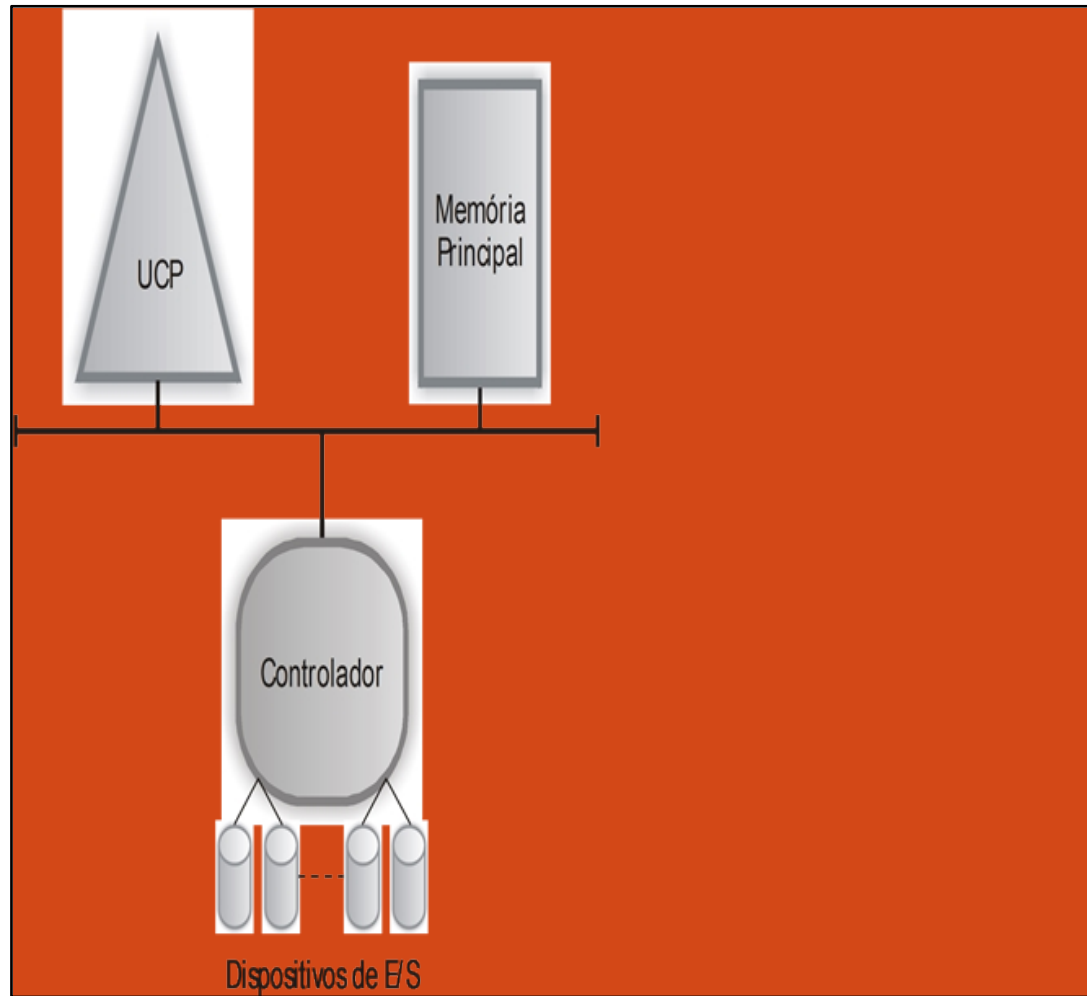
I/O – dirigido por interrupção



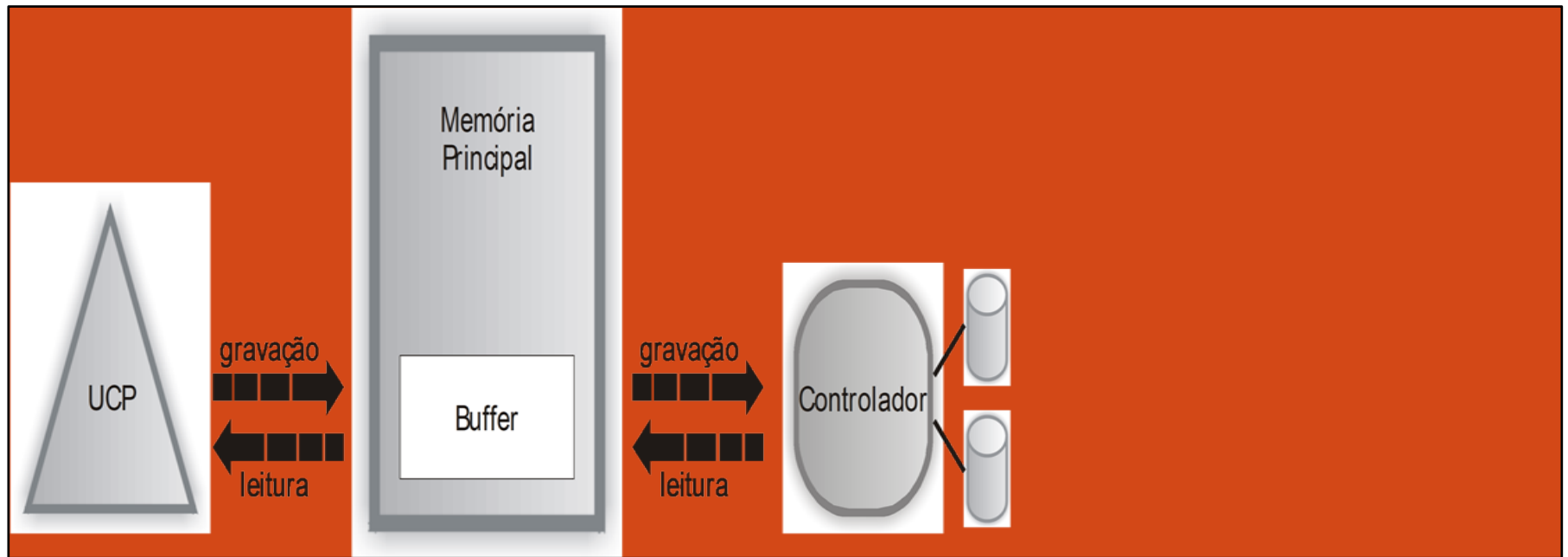
I/O - DMA



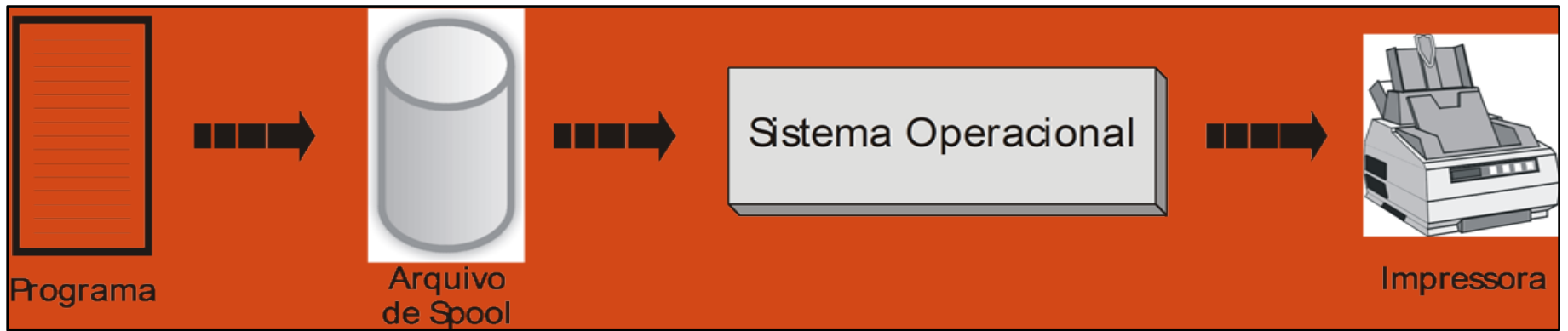
I/O - Controlador



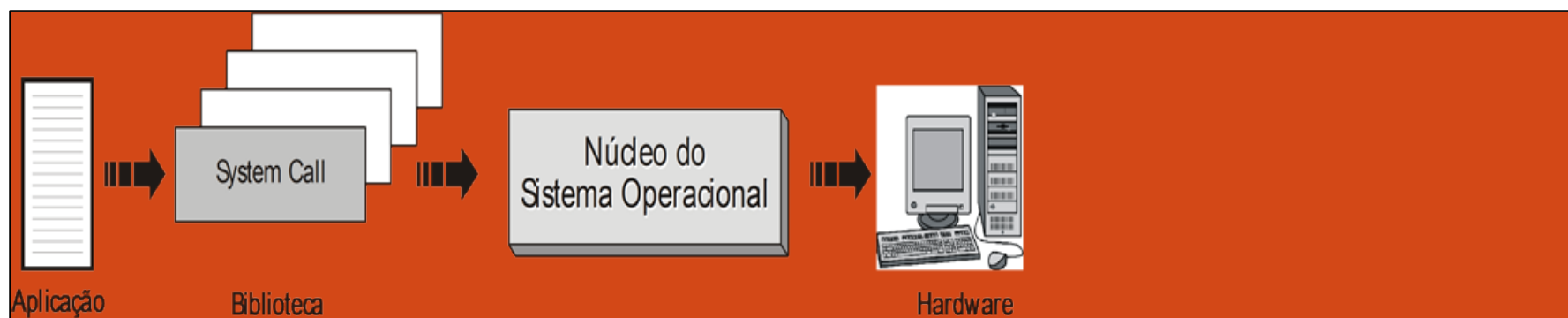
I/O - Buffering



I/O - Spooling



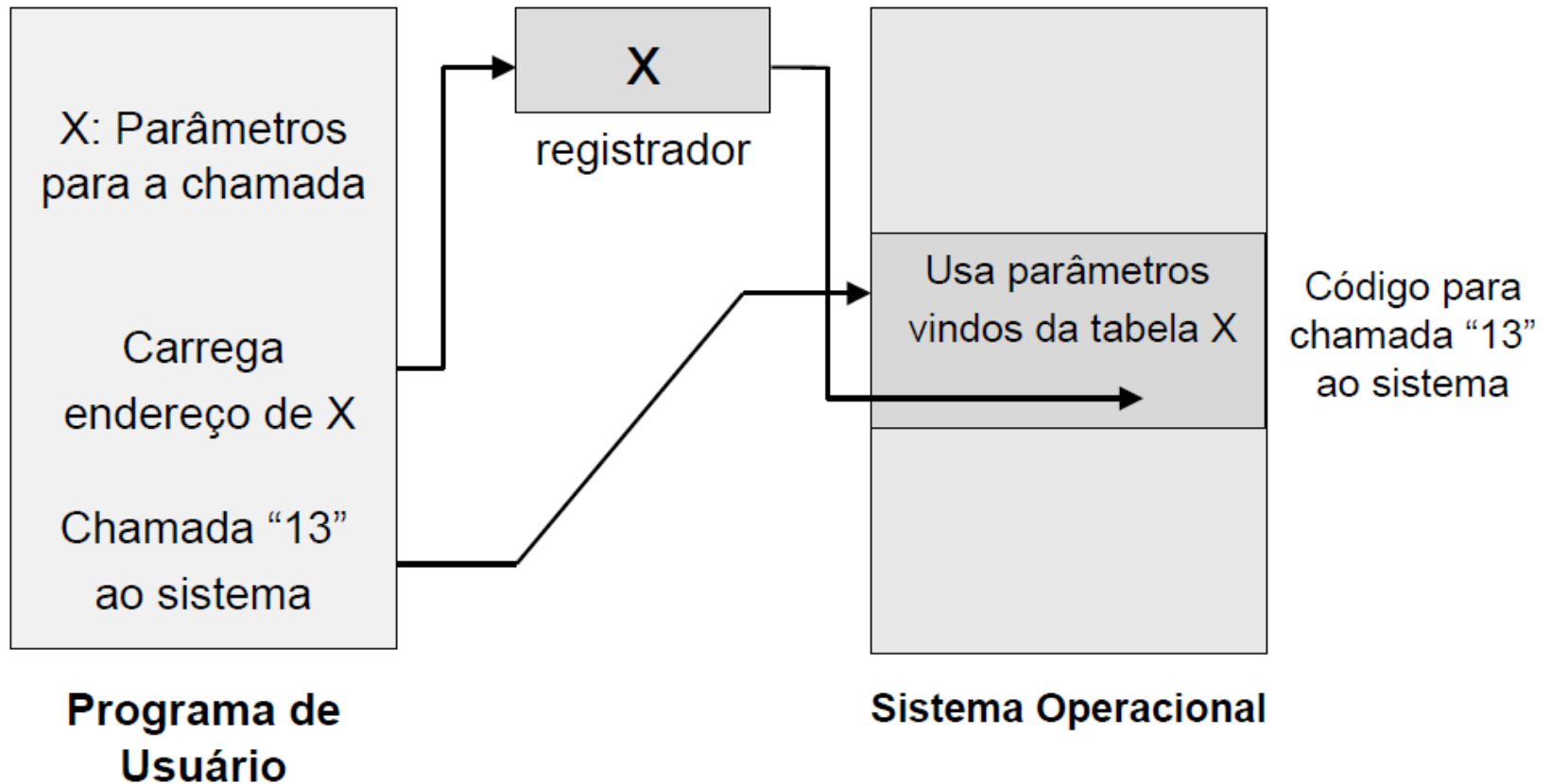
Chamadas de sistema



Chamadas de sistema

- API
 - Win32
 - Posix
 - Java
- Passagem de parâmetros
 - Registradores
 - Tabela em memória
 - Pilha

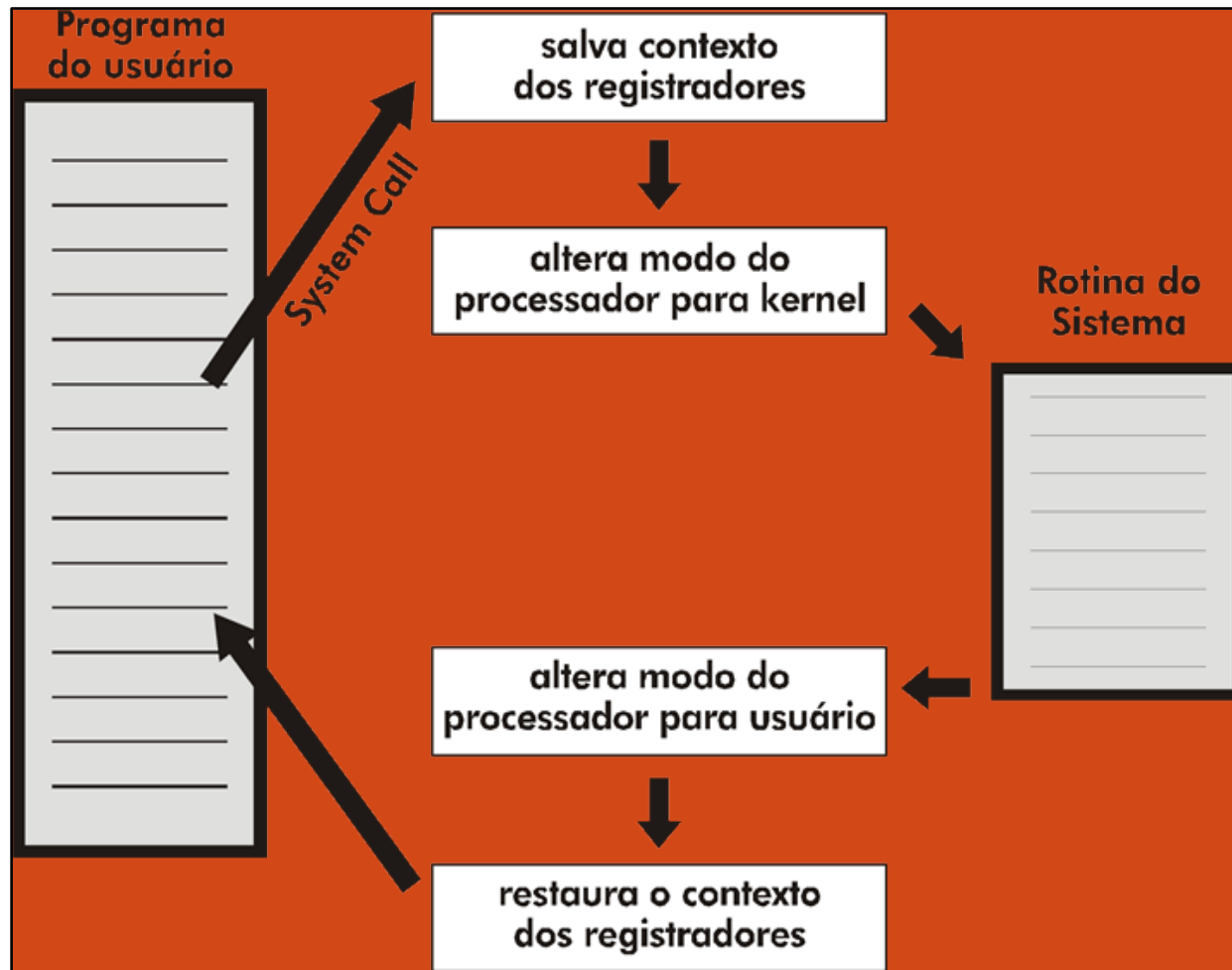
Chamadas de sistema



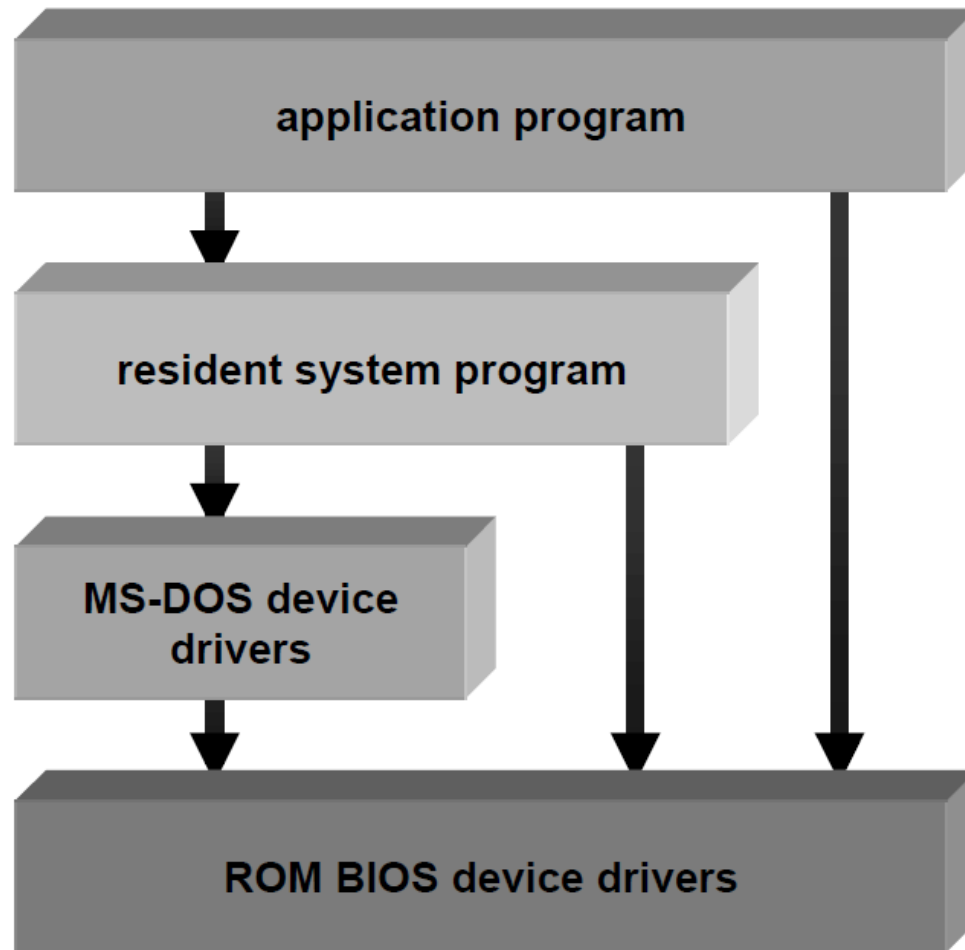
Chamadas de sistema

Tipo	Windows	Unix
Controle de Processos	CreateProcess()	fork()
	ExitProcess()	exit()
	WaitForSingleObject()	wait()
Manipulação de Arquivos	CreateFile()	open()
	ReadFile()	read()
	WriteFile()	write()
	CloseHandle()	close()
Manipulação de Dispositivos	SetConsoleMode()	ioctl()
	ReadConsole()	read()
	WriteConsole()	write()
Manipulação de Informações	GetCurrentProcessID()	getpid()
	SetTimer()	alarm()
	Sleep()	sleep()
Comunicação	CreatePipe()	pipe()
	CreateFileMapping()	shmget()
	MapViewOfFile()	mmap()
Proteção	SetFileSecurity()	chmod()
	InitializeSecurityDescriptor()	umask()
	SetSecurityDescriptorGroup()	chown()

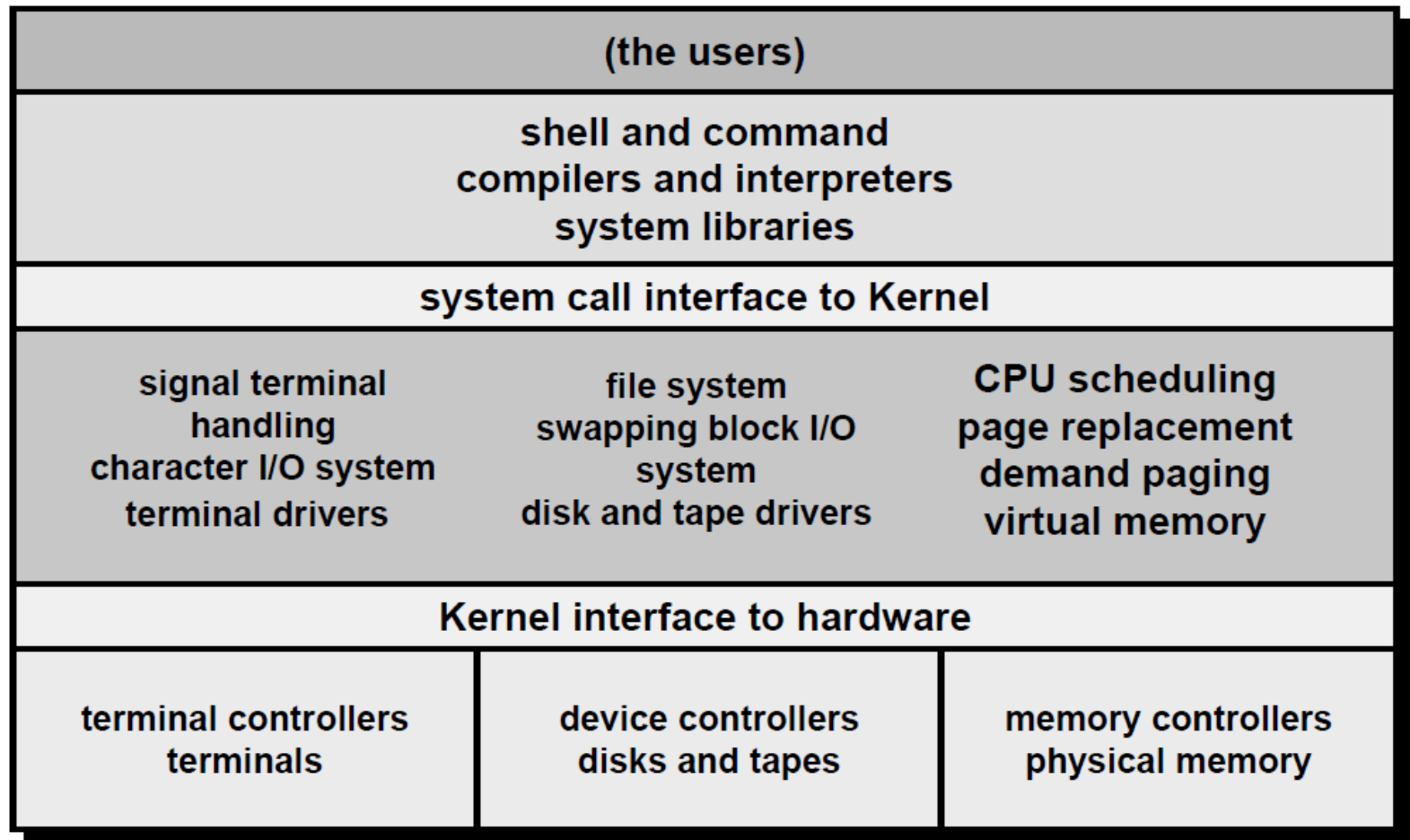
Chamadas de sistema



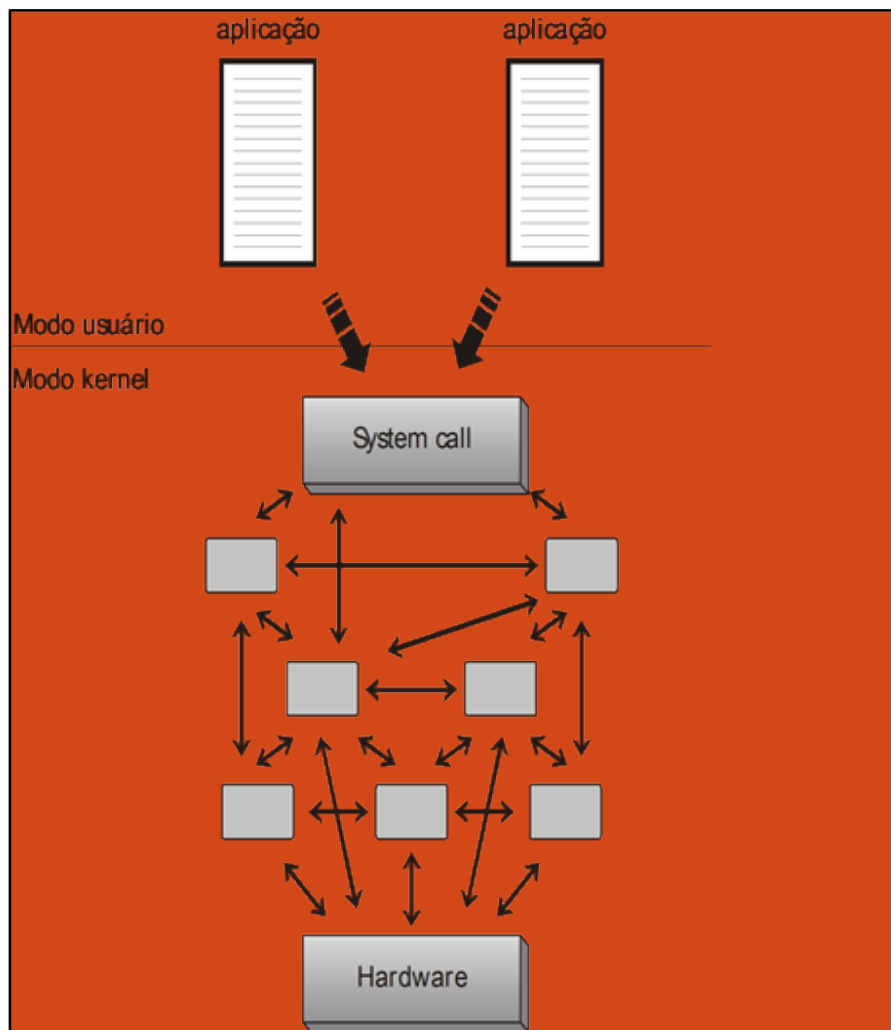
Estrutura Simples - Dos



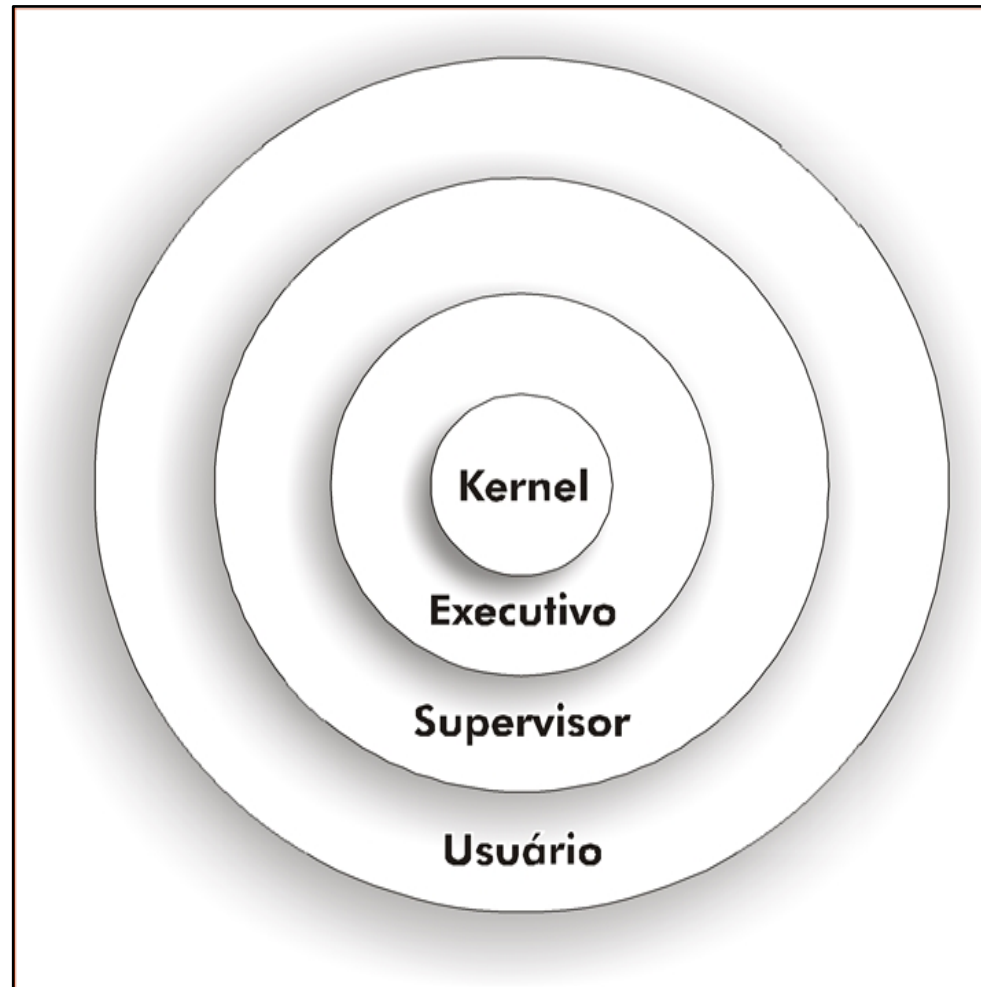
Estrutura Simples (Camadas?) - Unix



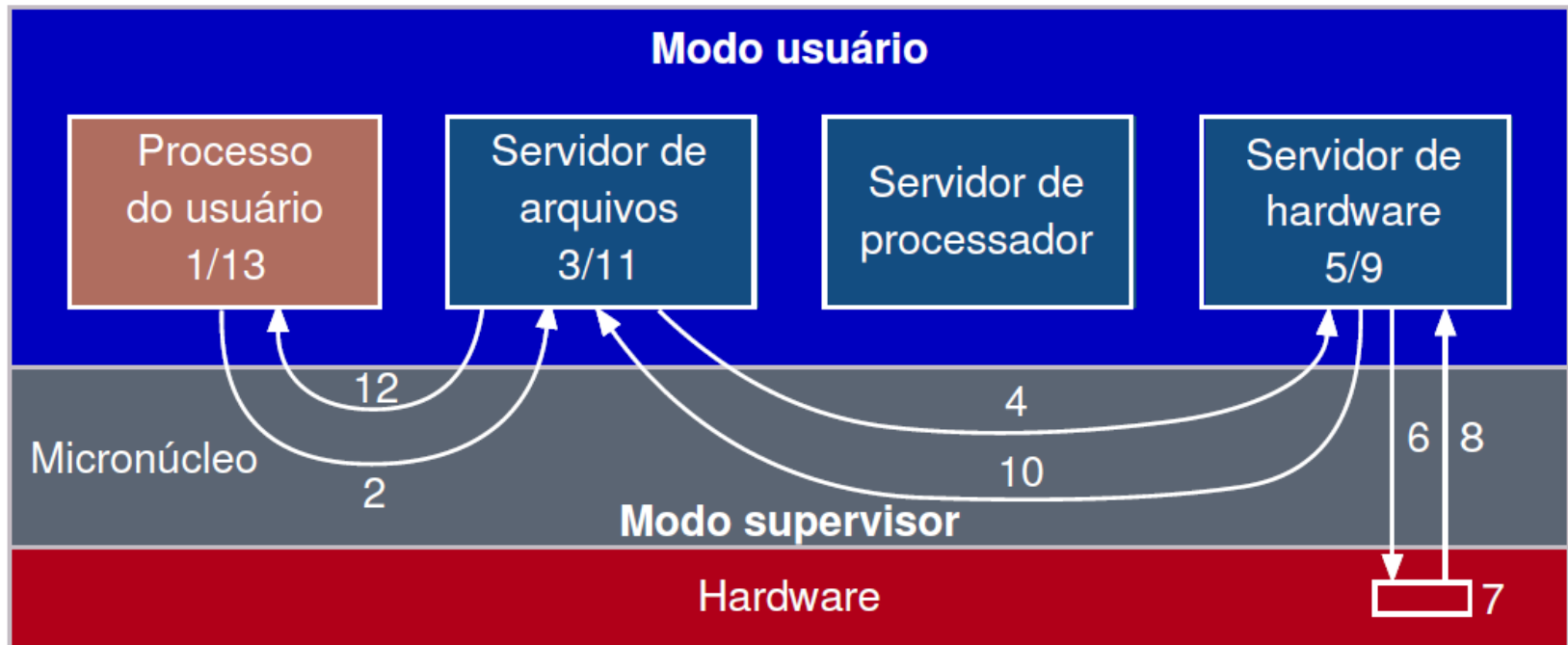
Arquitetura Monolítica - Linux



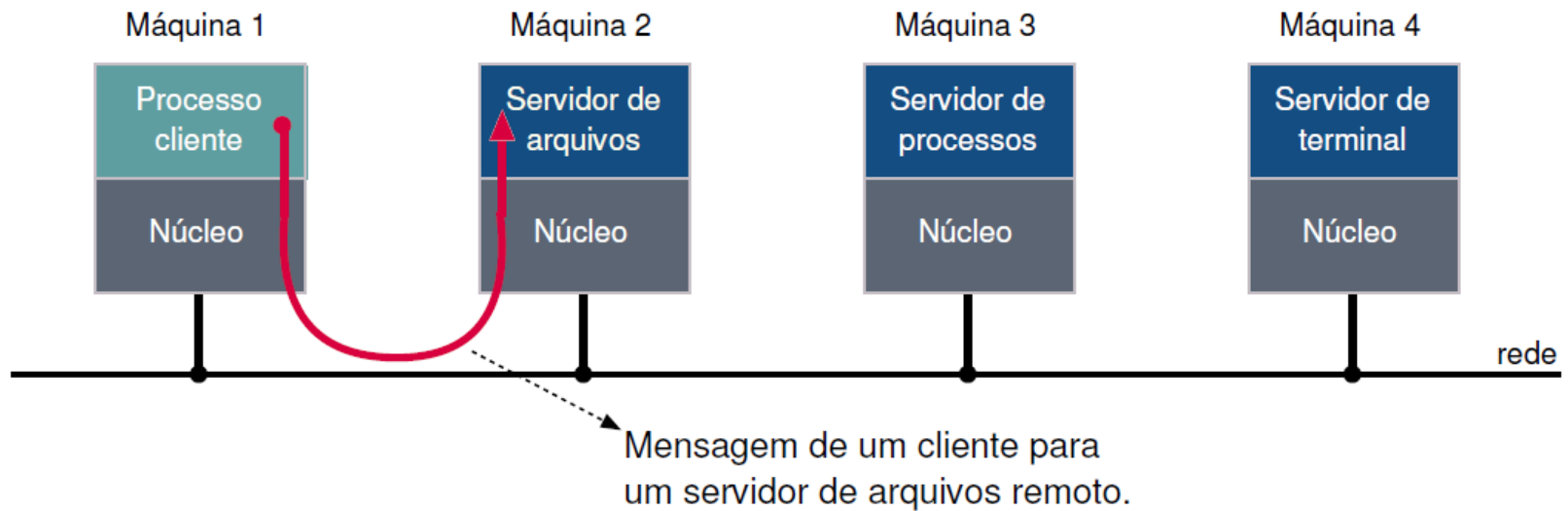
Arquitetura em Camadas - OpenVMS



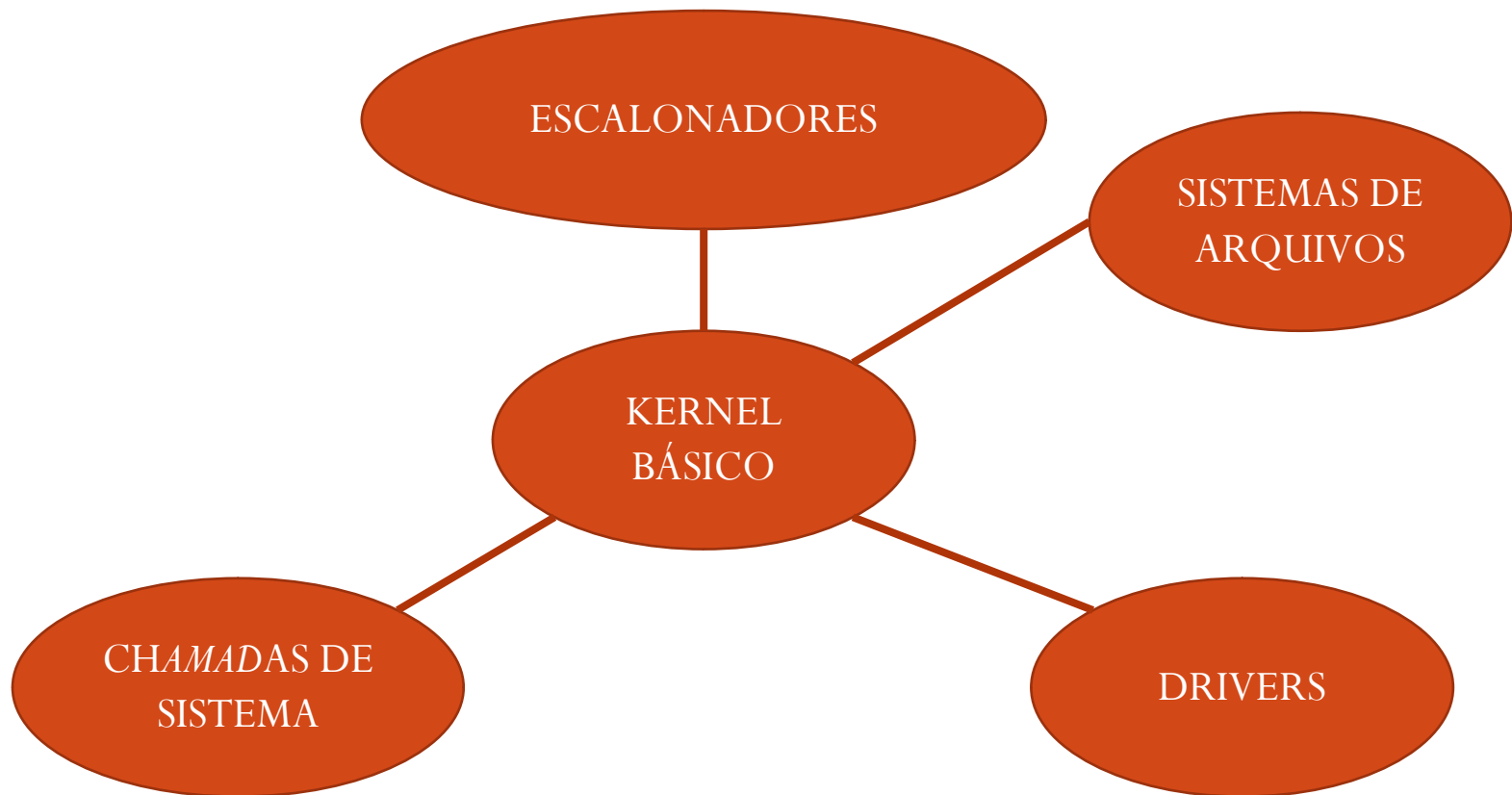
Arquitetura Microkernel ou Cliente-Servidor – Mach e Windows NT



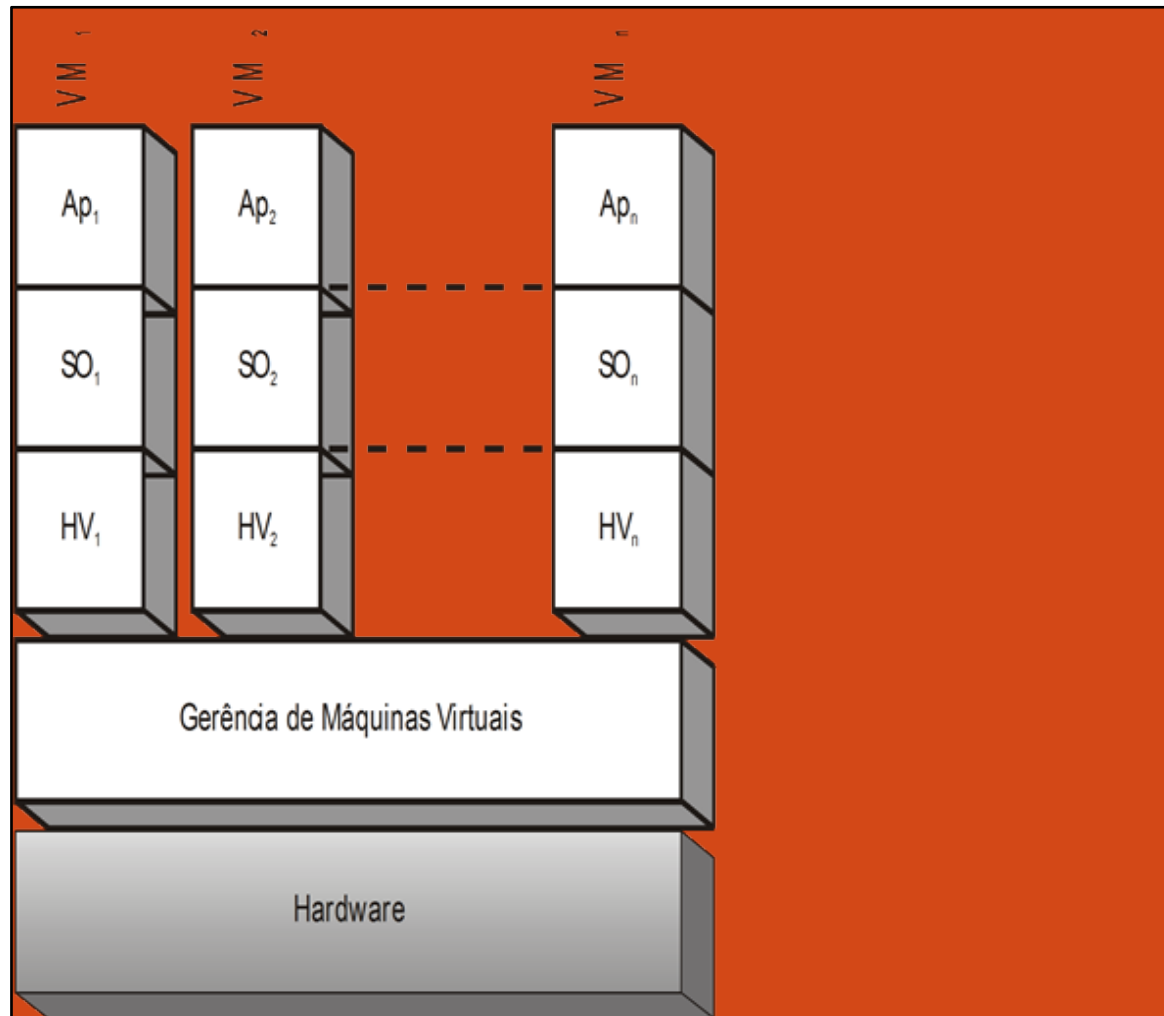
Arquitetura Microkernel ou Cliente-Servidor



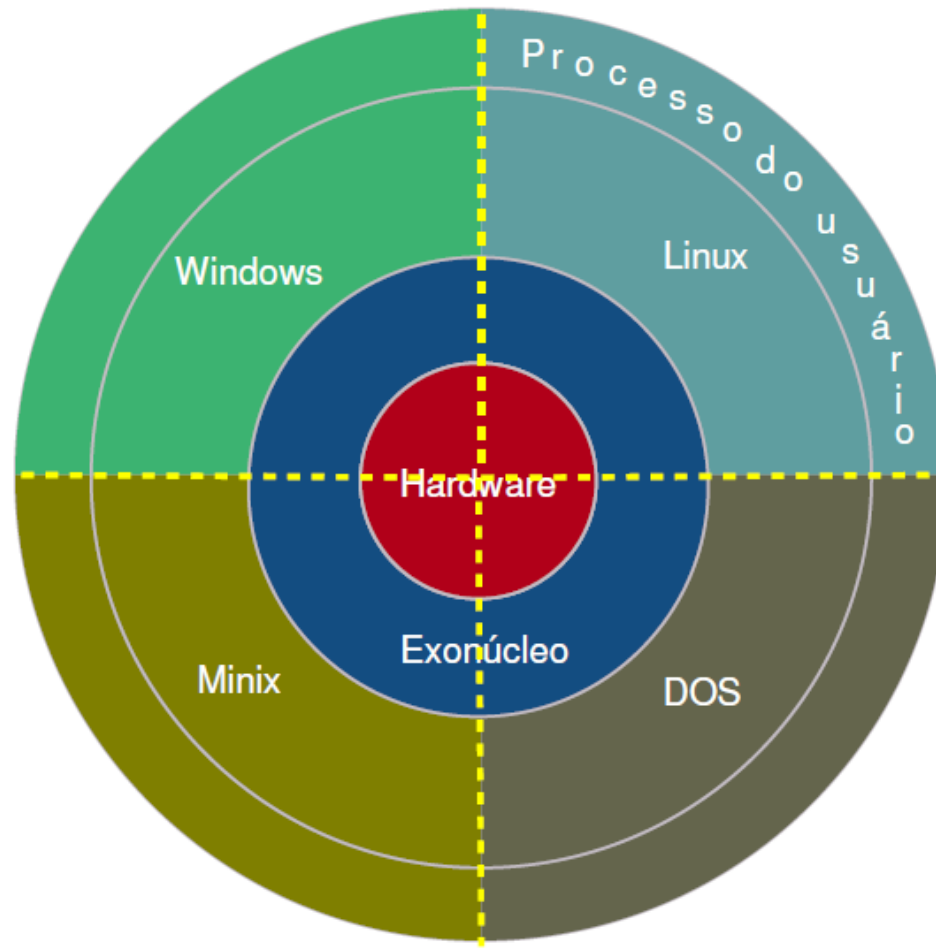
Módulos - Solaris



Máquinas Virtuais



Exonúcleo



Máquina Virtual Java

