控制寄存器概览

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最近看虚拟化的书经常遇到CR寄存器
目前只知道CR3和页表相关

现查阅维基百科对应页面 (https://en.wikipedia.org/wiki/Control_register)

汇总如下：

(x86平台)

CR0

可以用来修改处理器的基本操作，如下：

Bit	Name	Full Name	Description
0	PE	Protected Mode Enable	If 1, system is in protected mode, else system is in real mode
1	MP	Monitor co-processor	Controls interaction of WAIT/FWAIT instructions with TS flag in CR0
2	EM	Emulation	If set, no x87 floating point unit present, if clear, x87 FPU present
3	TS	Task switched	Allows saving x87 task context upon a task switch only after x87 instruction used
4	ET	Extension type	On the 386, it allowed to specify whether the external math coprocessor was an 80287 or 80387
5	NE	Numeric error	Enable internal x87 floating point error reporting when set, else enables PC style x87 error detection
16	WP	Write protect	When set, the CPU can't write to read-only pages when privilege level is 0
18	AM	Alignment mask	Alignment check enabled if AM set, AC flag (in EFLAGS register) set, and privilege level is 3
29	NW	Not-write through	Globally enables/disable write-through caching
30	CD	Cache disable	Globally enables/disable the memory cache
31	PG	Paging	If 1, enable paging and use the CR3 register, else disable paging

CR1

保留

CR2

保存PFLA(Page Fault Linear Address)的值
当发生缺页页错误时候，这里保存产生缺页错误的虚拟地址。
缺页错误处理通常会从这获取错误的虚拟地址。

CR3

虚拟地址启用且CR0中PG位设置为1的情况下，CR3可以协助处理器将线性地址转换为物理地址。
一般情况下为MMU提供页表的入口实现。