Pagination 32-bit

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March 10, 2019

Upper portion of a virtual address is used to to identify a series of paging-structure entries.The last of these entries identifies the physical address of the region to which the linear address translates (called the **page frame**). The lower portion of the linear address (called the **page offset**) identifies the specific address within that region to which the linear address translates.

The first paging structure is located at the pysical address in CR3.
With 32-bit paging, each paging structure comprises 1024 = 210 entries. For this reason, the translation process uses 10 bits at a time from a 32-bit linear address.

Bits 31:22 identify the first paging-structure entry. (Page directory)
Bits 21:12 identify a second. The latter identifies the page frame. (Page table)
Bits 11:0 of the linear address are the page offset within the 4-KByte page frame ($2^{12} = 4096$)

Si une page est mappe depuis la premiere etape (un seul niveau de referencement), alors la page frame fait $2^{22} = 4\,194\,304\,\text{KiB} = 4\,\text{MB}$.

A directory is located at the physical address specified in bits 31:12 of CR3.

A PD contains 1024 PDE, a PDE is selected using the PA defined as follows :

- Bits 39:32 are all 0
- Bits 31:12 are from CR3.
- Bits 11:2 are bits 31:22 of the linear address.
- Bits 1:0 are 0

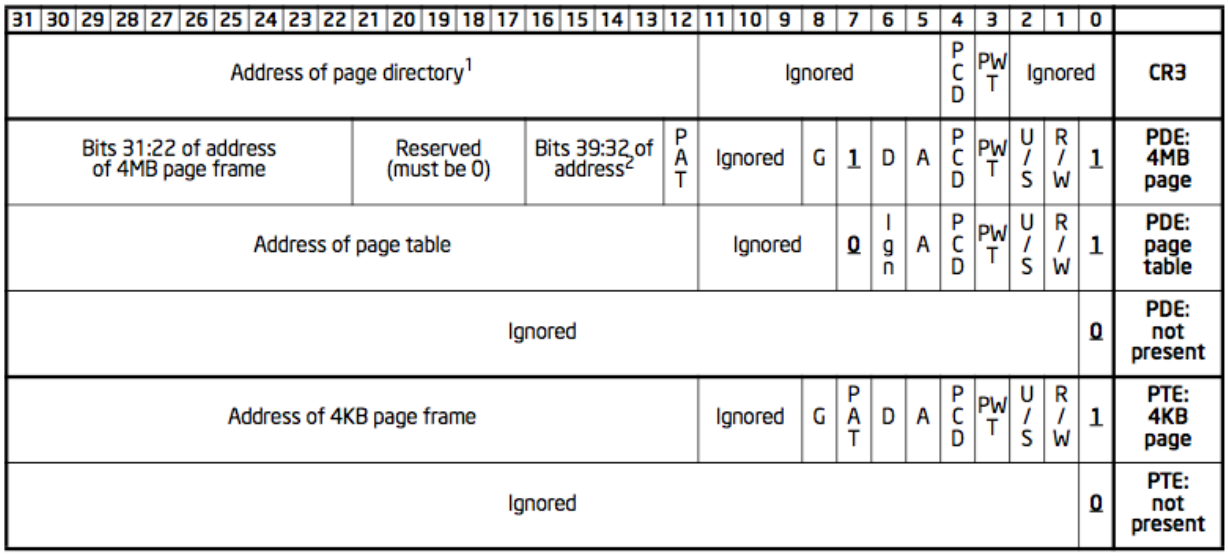

Figure 4-4. Formats of CR3 and Paging-Structure Entries with 32-Bit Paging