Operating System Design

2019711610 박찬열

Paper: Efficient Virtual Memory for Big Memory Servers

This paper introduced the direct segment which maps a large range of contiguous virtual memory addresses to contiguous physical memory addresses to contiguous physical memory addresses using small, fixed register (base, limit, offset) for each core. This paper shows that TLB using small page size has very high cost when traversing TLB and using huge pages still has cost. Also, the big memory workloads do not fully use the benefits of paging, so by using direct segment, they could reduce the TLB traverse cost. This not only address the problem of using default page size on modern system and show the characteristics of big memory workloads that do not fully use the benefits of paging.