TERM PAPER

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What is virtual memory?

Virtual memory is a storage mechanism which offer users an illusion of having a very big main memory.it is done by treating a part of secondary memory as the main memory.in virtual memory the user can store processes with a bogger size than the available main memory.

Therefore, instead of loading one long process in the main memory , the OS loads the various parts of more than one process in the main memory.it is implemented with demand paging and demand segmentation.

Why we need a virtual memory?

Here, are reasons of using virtual memory:

*Whenever computer doesn’t have space in the physical memory it writes what it needs to remember to it the hard disk in swap file as virtual memory.

* if a computer running windows needs more memory /Ram then installed in the system, it uses a small portion of the hard disk for this purpose.

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How virtual memory works?

Virtual memory used whenever some page required to be loaded in the main memory and memory is not available for those many pages. So in this case, instead of preventing pages from entering in the main memory, the os searches for ram space that are minimum used in the recent time or that are not referenced into the secondary memory to make the space for new space in the main memory.

Let's assume that an OS requires 300 MB of memory to store all the running programs. However, there's currently only 50 MB of available physical memory stored on the RAM.

- The OS will then set up 250 MB of virtual memory and use a program called the Virtual Memory Manager(VMM) to manage that 250 MB.
- So, in this case, the VMM will create a file on the hard disk that is 250 MB in size to store extra memory that is required.
- The OS will now proceed to address memory as it considers 300 MB of real memory stored in the RAM, even if only 50 MB space is available.
- It is the job of the VMM to manage 300 MB memory even if just 50 MB of real memory space is available.

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