

What is high memory and Low memory in Linux?

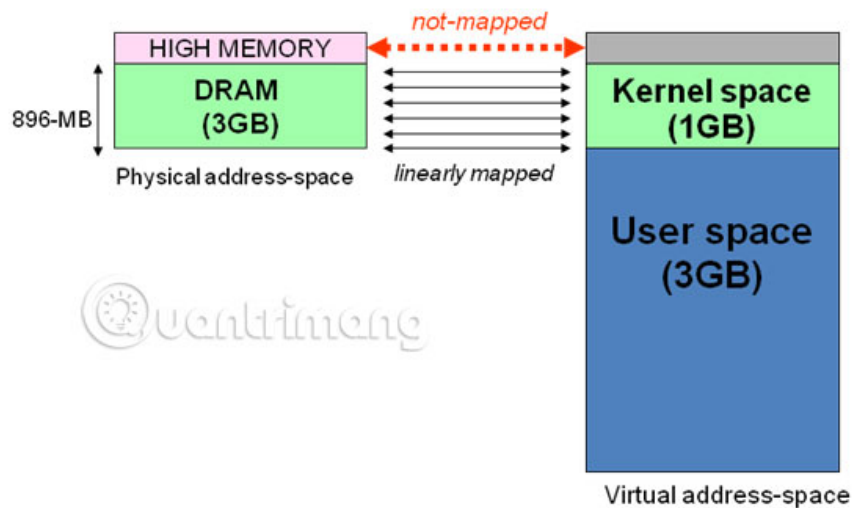
Do you know what High memory and Low memory are in Linux? Find out with TipsMake.com through the following article!

When running the **show module status** command from CLI or **cat / proc / meminfo** command on the module, the output lists the values ??for High memory and Low memory:

```
total: used: free: shared: buffers: cached: Mem: 1049051136 765775872 283275264
```

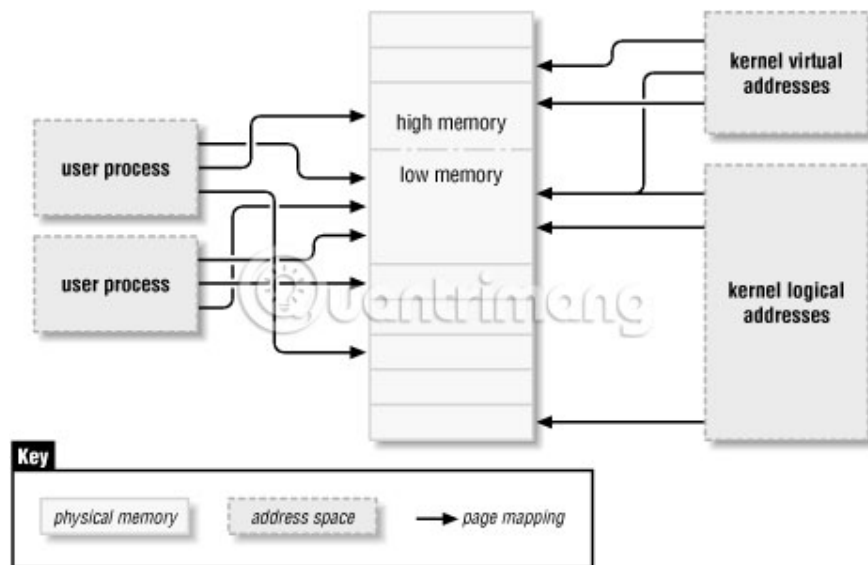
So you know what High memory and Low memory are in Linux? Find out with **TipsMake.com** through the following article!

What is high memory and Low memory?



1. High memory is the memory part that user-space programs can handle. High memory does not affect Low memory.
2. Low memory is the memory part that the Linux kernel can handle directly. If the kernel must access High memory, the kernel must first map to its own address space.

How is high memory and Low memory used?



On a 32-bit Linux operating system, the CPU can handle up to 4GB of memory. Memory is divided into Low memory (also known as Normal memory), which is mapped directly into the kernel's address space, and High memory, without direct kernel mapping. In other words:

1. The kernel itself (including its operating modules, for example Check Point kernel modules) can only use Low memory.
2. The user processes on the system (anything that is not a kernel) are capable of using both Low and High memory.

Situations that can occur with High memory and Low memory

Due to the Low memory limit, OoM (Out of Memory killer) can be called even if there is a lot of free memory. This situation occurs when Low memory is exhausted and the kernel needs to allocate more memory. However, an unusual situation can happen is that there are many high memory vacancies but all Low memory is empty. More commonly, both High and Low memory are close to zero.

High memory usually starts at over 896MB. However, on Blue Coat X-Series chassis, the limits will vary.

Please note that on 64-bit operating systems, since there is too much virtual memory address space, **Low memory** should be equal to **Total memory**. When running the **show module status** command from CLI, the High memory and Low memory values ??will not appear.

```
Slot 14: SDRAM 1 Size 1048576(KB) SDRAM 2 Size 1048576(KB) SDRAM 3 Size 1048576(KB)
```

Running **cat /proc/meminfo** on modules, **HighTotal** and **HighFree** will always be **0** :

```
# cat /proc/meminfo MemTotal: 3591768 kB MemFree: 135968 kB Buffers: 378312 kB
```

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