

Chapter 1 Hardware

Unit 1.5 Virtual Memory

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词汇与词组

1. **Virtual memory** is a common part of most **operating systems** on desktop computers.
 - **Virtual memory**: refers to an **imaginary** set of locations, or addresses, where you can store data. **虚拟内存**
 - It is imaginary in the sense that **the memory area is not the same as the real physical memory** composed of transistors(晶体管).
 - **Virtual reality (VR)** is a simulated experience that can be similar to or completely different from the real world. **虚拟现实**的基本实现方式是计算机模拟虚拟环境从而给人以环境沉浸感
 - **Virtual machine (VM)** is an emulation of a computer system. **虚拟机**
 - **Operating system (OS)** is a system software that manages computer hardware, software resources, and provides common services for computer programs. **操作系统**

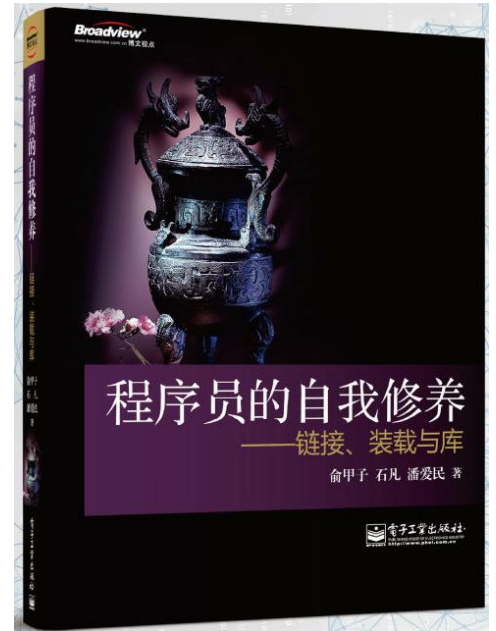
2. If they were no **such** thing **as** virtual memory, then once you **filled up** the available RAM your computer would have to say, "Sorry, you can not **load** any more applications. Please close another application to load a new one."

➤ **Such .. as ...** 像...这样的...

1) I do not like **such** men **as** spend their money in an incorrect way.
我不喜欢那种乱花钱的人。

➤ **Fill up** 装满

➤ **Load** 装载（到内存）



3. **With** virtual memory, what the computer can do is **look at** RAM **for** areas that have not been used recently and copy them onto the hard disk.

➤ **With:** having or carrying sth 有；具有；带有

➤ **Look at** 查看（内存中最近未使用的区域）

4. This **frees up** space in RAM to load the new application.

➤ **Free up** 释放（存储空间）

5. Because hard disk space is so much **cheaper** than RAM **chips**, it also has a nice **economic benefit**.

➤ **economic benefit** 经济效益

6. The technology of a hard drive is not **geared toward** accessing small pieces of data at a time.

➤ **gear** /gɪə(r)/ 使……适合；使……准备好

If someone or something is **geared to** or **toward** a particular purpose, they are organized or designed in order to achieve that purpose.

1) Colleges are not always **geared to** the needs of mature students. 大学并不总是去适应成年学生的需要。

2) My training was **geared toward** winning gold.

我的训练是为赢得金牌去规划的。

7. **When that's the case**, virtual memory is perfect. **When it is not the case**, the operating system has to **constantly** swap information **back and forth** between RAM and the hard disk.

➤ **When that's the case** 在这种情况下（“若果真如此”）

➤ **When it is not the case** 当情况并非如此的时候

➤ **Constantly** 不断地，时常地；始终；一直；

New positions are **constantly** created that require people to keep learning.

➤ **Swap** 调换

➤ **back and forth** 反复地，来回地（forth 表示向前）

The pendulum swings **back and forth**.

这单摆来回摆动。

8. This is called **thrashing**, and it can make your computer feel **incredibly** slow.

➤ Thrashing 抖动（颠簸）

➤ incredibly 难以置信地；非常地

9. The area of the hard disk that stores the RAM image is called a **page file**. It holds **pages of RAM** on the hard disk, and the operating system moves data back and forth between the page file and RAM. On a Windows machine, page files have a .SWP extension.

➤ **Page** 页面

1) A **page**, **memory page**, or **virtual page** is a fixed-length contiguous block of **virtual** memory.

2) A **page frame** is the smallest fixed-length contiguous block of **physical** memory into which memory pages are mapped by the operating system.

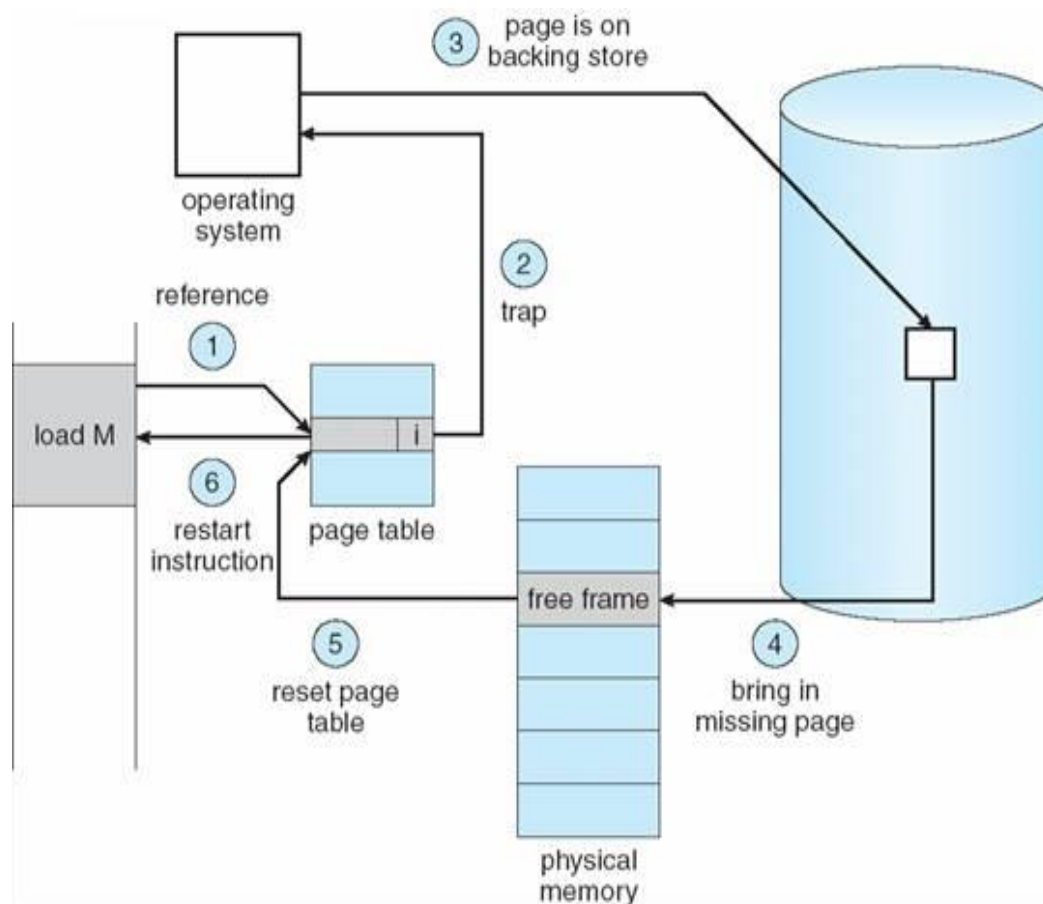
➤ **Page file** 页面文件，（一块存储，大小确定的）

➤ **Page fault** 缺页

When a process tries to reference a page **not** currently **present** in RAM, the processor treats this *invalid* memory reference as a **page fault** and transfers control from the program to the operating system.

The operating system must:

- 1) Determine the location of the data on disk.
- 2) Obtain an empty page frame in RAM to use as a container for the data.
- 3) Load the requested data into the available page frame.
- 4) Update the page table to refer to the new page frame.
- 5) Return control to the program, transparently retrying the instruction that caused the page fault.



10. Windows XP has an intelligent virtual memory manager that uses a **default setting** to help Windows allocate hard drive space for virtual memory as needed.

➤ **default setting** 默认设置

11. Right click on My Computer **icon** and click “**Properties**”.

➤ **icon** /'aɪkɒn/ 图标 来自拉丁语 icon, 圣像, 神像。最早用于描绘耶稣等圣人的神像, 引申词义偶像, 图像。

➤ **Property** 属性, 性质, 性能; 财产; 所有权

If you have a gradient field then it should have this **property**.
若给定一个梯度场, 则它应该满足这个性质。

12. Go to the “Advanced” **tab**.

➤ **tab** 标签



13. The amount of hard drive space you allocate for virtual memory is important. If you allocate too little, you will get “**Out of Memory**” errors.

➤ **Out of Memory** 内存不足

14. If you find that you need to keep increasing the size of the virtual memory, you probably are also finding that your system is **sluggish** and accesses the hard drive constantly.

➤ **sluggish** /'slʌgɪʃ/ 迟缓的

15. Trick 技巧； 诡计； 花招； 骗局； 把戏

They had to think of a trick to get past the guards.

他们只好想出个计谋骗过岗哨。

16. Modification 【名词】修正

➤ Refine 【动词】 精炼，提纯； 改善； 使…文雅

➤ Refinement 【名词】 精化