Querying system memory usage from c in linux

AUGUST 25, 2011 • BY TEJAINECE

My task was to write a program which creates memory load and fragmentation stress on linux. Before I can start on that, I had to know how much ram is present in total and how much is available. First idea that comes to our mind is,

```
1  cat /proc/meminfo
```

Other alternatives are,

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But I wanted a way to get this info from a c program. My first trial was using **get_phys_pages** and **get_avphys_pages**.

```
1  printf("total memory    : %10lin", get_phys_pages() * getpagesize());
2  printf("free memory     : %10lin", get_avphys_pages() * getpagesize());
```
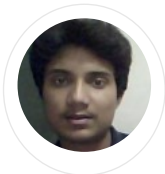
The problem with this method is, **get_avphys_pages** returns the free memory excluding cached and buffered memory. So I tried **sysinfo** system call.

```
1  struct sysinfo si;
2  if(sysinfo(&si) < 0) {
3      printf("error! couldn't get sin");
4  }
5  printf("total memory    : %10lin", si.totalram);
6  printf("free memory     : %10lin", si.freeram);
7  printf("shared memory   : %10lin", si.sharedram);
8  printf("buffer memory   : %10lin", si.bufferram);
```

Unfortunately, sysinfo also returned the same free memory as **get_avphys_pages**. If we add buffer memory and cache memory to free memory returned, we will get the actual free memory available. Unfortunately, sysinfo only provides buffer memory size. So at the end i had to parse /proc/meminfo file to get memory size used as cache pages.

```
1  FILE *fp;
2  char buf[MAXLEN];
3  fp = fopen("/proc/meminfo", "r");
4  for(int i = 0; i <= 3; i++) {
5      fgets(buf, MAXLEN, fp);
6  }
7  char *p1 = strchr(buf, ":");
8  printf("%st%in", p1, strtoull(p1, NULL, 10));
```

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