# QProcess gets the CPU and memory usage of processes under Linux

tags: Qt Linux

- **principle**: Use the system's own ps command and free command to obtain the returned result and parse out the CPU and memory information from it

Execute ps u under the terminal*pid* The command, pid is the process number, can be obtained by getpid (), such as:

```
[shl@shl-ubuntu64 ~]$ ps u 1
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.1 185356  4840 ?        Ss   6月19   0:03 /sbin/init splash
[shl@shl-ubuntu64 ~]$
```

Execute the free command to get:

```
[shl@shl-ubuntu64 ~]$ free
              total        used        free      shared  buff/cache   available
Mem:        4016436     1879976      331156       61124     1805304     1722716
Swap:             0           0           0
[shl@shl-ubuntu64 ~]$
```

- **achieve:**

You can start an external process through the start() method provided in QProcess, then wait for the process to complete by calling the waitForFinished() method, and finally read the standard output through the readAllStandardOutput() method

```
#include <QProcess>

class CUinxSystemInfo
{
public:
    CUinxSystemInfo();
    ~CUinxSystemInfo();
    void getCpuRate();
    void GetMemeryUsage();

private:
    QString m_strCatCpu;
    QString m_strCatMem;
    QProcess *process;
};
```

```
CUinxSystemInfo::CUinxSystemInfo()
{
    pid_t pid = getpid();
    m_strCatCpu = QString("ps u %1").arg(pid);
    m_strCatMem = QString("free");
    process = new QProcess;
}
void CUinxSystemInfo::getCpuRate()
{
    process->start(m_strCatCpu);
    process->waitForFinished();
    QByteArray info = process->readAllStandardOutput();
    process->close();
    int index = info.indexOf('\n');
    int len = info.length();
    QByteArray cpuInfo =  info.right(len - index - 1);
    QByteArray simCpuInfo = cpuInfo.simplified();
    QList<QByteArray> l = simCpuInfo.split(' ');

    qDebug() << "cpu(%):" << l.at(2).toFloat();
}
void CUinxSystemInfo::GetMemeryUsage()
{
    process->start(m_strCatMem);
    process->waitForFinished();
    QByteArray info = process->readAllStandardOutput();
    process->close();
    QByteArray simMemInfo = info.simplified();
    QList<QByteArray> l = simMemInfo.split(' ');

    qDebug() << "TotalPhysical" << l.at(7).toInt();
    qDebug() << "dwLeftPhys" << l.at(9).toInt();
    qDebug() << "dwTotalVirual" << l.at(14).toInt();
    qDebug() << "dwLeftVirual" << l.at(16).toInt();
}
```

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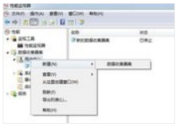
- **result**

```
cpu(%): 7.1
TotalPhysical 4016436
dwLeftPhys 208944
dwTotalVirual 0
dwLeftVirual 0
```

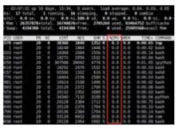
- **to sum up**: The string obtained by the readAllStandardOutput() method needs to remove extra white space characters, including'\n', '', etc., and then split according to spaces, and finally take out the string you want from QList<QByteArray> and convert it to the corresponding Types of.
- **note**: No need to convert QByteArray to QString type.

## Intelligent Recommendation



### Windows processes memory footprint and CPU usage

During the test, sometimes we need to focus on the case of a process of memory footprint, CPU usage, the number of handles, etc., on a Windows system, using windows built-in performance monitor can ac...



### Check server memory, CPU, GPU graphics usage under Linux

1. Check memory usage 1. Use the command: free -m 2. Memory usage: 3. Parameter description: (1) Mem line (units are M): total: total memory used: the number of used memory free: free memory shared: c...

### C language under Linux to obtain hard disk, CPU, memory usage

hard disk #include <sys/vfs.h> /* or <sys/statfs.h> */ int statfs(const char *path, struct statfs *buf); int fstatfs(int fd, struct statfs *buf); parameter: path: The file path name (not t...

### Raspberry Pi Gets cpu temperature, cpu usage, memory usage

Raspberry pie / proc / folder there are all kinds of virtual file can be used to read a variety of data systems. Here to read the memory usage, CPU usage, CPU temperature demonstration example, implem...

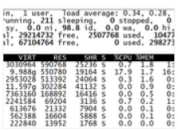
### Windows gets CPU, memory and disk usage scripts

Obtain the CPU usage script (vbs) and save it as cpu.vbs: Get the memory usage script (vbs), save as ram.vbs: Obtain disk usage scripts (vbs) and save as hard.vbs: The last batch executes the above sc...

## More Recommendation

### Android gets CPU, memory, disk usage

Now more and more garbage in the forum, 30 points for two small functions, still a code porter, some big gods have worked hard to encapsulate it for free, this kind of garbage handling a few lines of ...



### Linux queries the processes that occupy the most memory or CPU

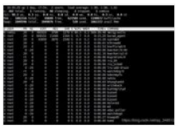
1. You can use the following command to check the 10 processes using the most memory method 1: If it is the highest three, 10 can be changed to 3 Command explanation: 1. ps: The parameter a refer...

### Linux records the CPU usage of historical processes

...

## Before taking process takes 10 processes cpu / memory under linux highes t

The process takes up to take the top 10 at # linux process cpu Take process memory (MEM) at # linux highest first 10 process Reproduced in: https: //my.oschina.net/redhat1520/blog/525641...



## Linux - The view CPU and memory usage

Linux view CPU and memory usage A, top command Two, ps command Three, pamp command Four, free command A, top command top command is commonly used under Linux performance analysis tools, it can display...