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Subject: why buffers cached is always 0 in VPS/VE?  
Posted by [tukey](#) on Mon, 08 Sep 2008 17:07:51 GMT  
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hello, everyone

when I do a "free" in my VPS, the result is like below:

	total	used	free	shared	buffers	cached
Mem:	384	283	100	0	0	0
-/+ buffers/cache:		283	100			
Swap:	0	0	0			

I don't know why the "buffers" and "cached" is always 0.  
I mean every time, no matter what I did, it is just always 0.

And is it possible to be set?

Could anybody please give me an answer?

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Subject: Re: why buffers cached is always 0 in VPS/VE?  
Posted by [khorenko](#) on Mon, 08 Sep 2008 18:40:25 GMT  
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Hi!

'free' takes info from /proc/meminfo file generated by kernel.  
Surely /proc/meminfo inside a Container provides some virtual information, some of values are not virtualized there, for example Buffers and Cached are always reported zero.

```
# vzctl exec 690 cat /proc/meminfo |egrep "^Cached|Buffers"
Buffers:      0 kB
Cached:       0 kB
```

But why do you ask? Just a curiosity or some software suffers from that?

Thanks,  
Konstantin

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Subject: Re: why buffers cached is always 0 in VPS/VE?  
Posted by [tukey](#) on Tue, 09 Sep 2008 02:50:58 GMT  
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finist wrote on Mon, 08 September 2008 14:40Hi!

'free' takes info from /proc/meminfo file generated by kernel.

Surely /proc/meminfo inside a Container provides some virtual information, some of values are not visualized there, for example Buffers and Cached are always reported zero.

```
# vzctl exec 690 cat /proc/meminfo |egrep "^Cached|Buffers"
Buffers:          0 kB
Cached:           0 kB
```

But why do you ask? Just a curiosity or some software suffers from that?

Thanks,  
Konstantin

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Hi, Konstantin

Thank you for your reply. I understand what you meant about /proc/meminfo.  
I do suffer from memory insufficiency.

When I run tomcat and mysql, there is always an memory insufficiency error in my VE, which has 384MB total memory.

But when I do the same thing in another HardNode (it has no VEs),  
which has the same memory (no swap), there is no error occurs.

I compared my VE and the HardNode via "free", the only difference is "buffers" and "cached".

you see, if "buffers" and "cached" is unavailable, it actually needs more memory for running applications, right?  
Is there any solution?

ps. My settings of my VE is :

```
KMEMSIZE="11055923:11377049"
LOCKEDPAGES="256:256"
PRIVVMPAGES="96768:96968"
SHMPAGES="21504:21504"
NUMPROC="240:240"
PHYSPAGES="0:2147483647"
VMGUARPAGES="65536:2147483647"
OOMGUARPAGES="65536:2147483647"
NUMTCPSOCK="360:360"
NUMFLOCK="188:206"
NUMPTY="16:16"
NUMSIGINFO="256:256"
TCPSNDBUF="1720320:2703360"
TCPRCVBUF="1720320:2703360"
OTHERSOCKBUF="1126080:2097152"
DGRAMRCVBUF="262144:262144"
NUMOTHERSOCK="360:360"
NUMFILE="9312:9312"
```

DCACHESIZE="3409920:3624960"  
NUMIPTENT="128:128"  
AVNUMPROC="180:180"  
CPUUNITS="1000"  
ONBOOT="yes"  
ORIGIN\_SAMPLE="vps.basic"  
DISKSPACE="10485760:11530240"  
DISKINODES="2000000:2200000"  
QUOTATIME="0"  
OSTEMPLATE="slackware-12.0-i386-minimal"  
IP\_ADDRESS="192.168.1.202"

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [khorenko](#) on Tue, 09 Sep 2008 06:29:35 GMT

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Hi,

Quote:you see, if "buffers" and "cached" is unavailable, it actually needs more memory for running applications, right?

This should not influence at all in fact.

Please, check /proc/user\_beancounters - is there any failcounters after an attempt to start tomcat/mysql?

--

Konstantin

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [tukey](#) on Tue, 09 Sep 2008 06:38:50 GMT

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finist wrote on Tue, 09 September 2008 02:29Hi,

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This should not influence at all in fact.

Please, check /proc/user\_beancounters - is there any failcounters after an attempt to start tomcat/mysql?

--

Konstantin

Yes, there are failcounters. Starting tomcat is OK, it just happens when I try to shutdown tomcat. 384MB is not enough for tomcat and mysql in a VE, while it is enough in a physical machine(no swap)?

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [khorenko](#) on Tue, 09 Sep 2008 07:11:30 GMT

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which failcounters there were?

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [khorenko](#) on Tue, 09 Sep 2008 07:26:11 GMT

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Quote:Yes, there are failcounters. Starting tomcat is OK, it just happens when I try to shutdown tomcat.

384MB is not enough for tomcat and mysql in a VE, while it is enough in a physical machine(no swap)?

Look, there is slightly different mechanisms in memory handling on Hardware Node and inside a Container.

if you have only 384Mb RAM on a Hardware Node and no swap - you'll be able to alloc 1Gb of memory in your problem. Without any problem. But if you later try to use that memory - read/write something from/to it, the process will be killed.

Inside a Container such a malloc of 1Gb will fail from the very beginning on an allocation stage - not actual using.

i think tomcat just allocs quite a lot of memory which does not really use - that's why it runs ok on a hardware node but fails inside a Container.

To gain the same functionality inside a Container you need to increase the privvmpages, but set the oomguarpages to 384Mb. In that case a program will be able to allocate a lot of RAM, but in case of global memory shortage on the node (if that process will try to use all allocated memory) - the process will be killed.

Hope that helps.

--

Konstantin

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [tukey](#) on Tue, 09 Sep 2008 07:58:46 GMT

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it was privvmpages.

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [tukey](#) on Tue, 09 Sep 2008 08:04:22 GMT

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finist wrote on Tue, 09 September 2008 03:26Quote:Yes, there are failcounters. Starting tomcat is OK, it just happens when I try to shutdown tomcat.

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Look, there is slightly different mechanisms in memory handling on Hardware Node and inside a Container.

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Hope that helps.

--

Konstantin

Thank you for your explanation. It makes me more clear.

Anyway, the buffers and cached will be just always kept as 0, because of the different memory allocation mechanisms between hardware node and VE. Am I right?

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Subject: Re: why buffers cached is always 0 in VPS/VE?

Posted by [khorenko](#) on Tue, 09 Sep 2008 08:21:23 GMT

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Quote:Anyway, the buffers and cached will be just always kept as 0, because of the different memory allocation mechanisms between hardware node and VE. Am I right?

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They will always \_reported\_ as 0, as these fields are just not virtualized. Not because of different memory allocation mechanism, but due to these fields are simply not virtualized - surely a Container has some buffers and caches but they are not accounted and just always reported as 0.

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