Subject: Weird performance problem
Posted by ugob on Wed, 22 Apr 2009 12:27:37 GMT
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Hi,

I'm running a CentOS 4. server and I sometimes face a weird problem.
It is a weird performance problem, and here is how I discovered it.

This server runs OpenVZ virtual machines, and one of them is an asterisk
server for my personal use. The first symptom of the problem is that
the voice quality became flaky. So I logged on the server to see what
could be eating cpu cycles, when I ran top, it took almost one minute
before top actually showed. Another hint is that when I run dstat (a
monitoring utility that is a mix of iostat and vmstat and other stats),
I often get a "missed xx ticks", where xx is a number.

Example (current) (sorry for the wrap):

```
----total-cpu-usage---- -dsk/total- -net/total- ---paging-- ---system--
usr sys idl wai hiq siq| read  writ| recv  send|  in   out | int   csw
  3   2  93   2   0   0| 106k  273k|   0     0 | 0.2   0.4 |1039   389
  3   6  91   0   0   0|   0  6416k| 276k  275k|   0     0 |2160  6822
 missed 55 ticks
  4  10  84   2   0   0|1200k 1992k|  82k   93k|   0     0 |1188  6275
 missed 29 ticks
  1   0  99   0   0   0|   0  1312k|  65k   66k|   0     0 |1050  1114
 missed 38 ticks
  2   1  96   0   0   0|   0  1168k|  57k   59k|   0     0 | 491   877
 missed 13 ticks
  3   1  94   1   0   0|   0  6016k| 181k  176k|   0     0 |2169  5996
 missed 50 ticks
  4   2  91   1   0   0|  28k 8744k| 216k  214k|   0     0 |2159  5438
 missed 37 ticks
  1   1  98   0   0   0|   0  2632k|  93k   91k|   0     0 | 983  1381
 missed 34 ticks
  1   1  98   1   0   0|   0  5624k| 113k  110k|   0     0 |1569  2643
 missed 52 ticks
  1   1  98   1   0   0|   0  2432k|  29k   28k|   0     0 | 679   647
 missed 12 ticks
  0   0 100   0   0   0|   0     0 |  60B  374B|   0     0 |  13    15
  2   3  94   0   0   0|   0  1872k| 209k  210k|   0     0 |1375  3590
 missed 30 ticks
```

The problem is currently occuring, but it doesn't seem to be affecting
voice quality for now, so I have some time to try to find the cause.

The only solution I've found up to now is to reboot... But hey, this isn't a Windows 98 machine !

I tried restarting the VZ system, which restarts all the VMs, but it didn't solve the problem. I can't tell if the problem occurs on a stock centos kernel, because the server is running production (but non-critical) virtual machines, so it is always running the openVZ kernel.

So here is what I've done for now:

- Top shows a load of about 0.4

- vmstat 1 10 shows this:

```
procs -----------memory---------- ---swap-- -----io---- --system--
----cpu----
 r  b   swpd   free   buff  cache   si   so    bi    bo   in    cs us
sy id wa
 0  0    592 191092 381720 537956    0    0    53    68    4     3  3
2 93  2
 0  0    592 190720 381720 537956    0    0     0     0   32    60  1
1 98  0
 0  0    592 191092 381720 537956    0    0     0     0   41    59  0
0 100  0
 1  0    592 191092 381728 537948    0    0     0  2584  311    96 10
4 66 19
 0  0    592 189968 381732 537944    0    0     0  2080  222   174  2
3 79 16
 0  1    592 189968 381732 537944    0    0     0  3244  170    73 10
4 73 12
 0  0    592 190216 381732 537944    0    0     0   136   76   113  1
2 93  4
 0  0    592 189844 381732 537944    0    0     0     0   33    69  1
1 98  0
 0  0    592 189844 381732 537944    0    0     0     0   24    32  0
0 100  0
 0  0    592 190340 381732 537944    0    0     0     0   28    42  0
0 100  0
```

iostat -x 1 (excerpt)

```
Device:    rrqm/s wrqm/s   r/s   w/s  rsec/s  wsec/s    rkB/s    wkB/s
avgrq-sz avgqu-sz   await  svctm  %util
sda         0.00 171.00  0.00 124.00    0.00 2368.00     0.00  1184.00
   19.10     0.14    1.13   0.02   0.20
sdb         0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
    0.00     0.00    0.00   0.00   0.00
sdc         0.00 171.00  0.00 124.00    0.00 2368.00     0.00  1184.00
```

```
   19.10     0.17    1.35   0.02   0.30
sdd          0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
md0          0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
md2          0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
md1          0.00   0.00  0.00 294.00    0.00 2352.00     0.00  1176.00
    8.00     0.00    0.00   0.00   0.00
dm-0         0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
dm-1         0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
dm-2         0.00   0.00  0.00 294.00    0.00 2352.00     0.00  1176.00
    8.00     0.30    1.01   0.02   0.50
dm-3         0.00   0.00  0.00 294.00    0.00 2352.00     0.00  1176.00
    8.00     0.30    1.01   0.02   0.50
dm-4         0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
dm-5         0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
dm-6         0.00   0.00  0.00  0.00    0.00    0.00     0.00     0.00
   0.00     0.00    0.00   0.00   0.00
```

Another hint is that pings are really slow. Even pinging localhost is very long. The first reply is fast, but the second takes ages to come.

It seems to be blocking here:

```
recvmsg(3, 0xbfbf84b0, MSG_DONTWAIT)    = -1 EAGAIN (Resource
temporarily unavailable)
gettimeofday({1239887784, 389347}, NULL) = 0
poll(
```

The rest comes as soon as there is another response:

```
[{fd=3, events=POLLIN|POLLERR}], 1, 999) = 0
gettimeofday({1239887903, 119727}, NULL) = 0
gettimeofday({1239887903, 119791}, NULL) = 0
sendmsg(3, {msg_name(16)={sa_family=AF_INET, sin_port=htons(0),
sin_addr=inet_addr("127.0.0.1")},
msg_iov(1)=[{"  \10\0\335\2018)\0\4\0370\347I\357\323\1\0\10\t\n\v\f\r\16\17
\20\21\22\23\24\25\26\27 "...,
64}], msg_controllen=0, msg_flags=0}, MSG_CONFIRM) = 64
recvmsg(3, {msg_name(16)={sa_family=AF_INET, sin_port=htons(0),
sin_addr=inet_addr("127.0.0.1")},
msg_iov(1)=[{"  E\0\0T\26\264\0\0@\1e\363\177\0\0\1\177\0\0\1\0\0\345\2018)\ 0\4\0370\347I "...,
192}], msg_controllen=20, {cmsg_len=20, cmsg_level=SOL_SOCKET,
```

cmsg_type=0x1d /* SCM_??? */, ...}, msg_flags=0}, 0) = 84
write(1, "64 bytes from hn01.domain"..., 82) = 82
recvmsg(3, 0xbfbf84b0, MSG_DONTWAIT)   = -1 EAGAIN (Resource
temporarily unavailable)
gettimeofday({1239887903, 120785}, NULL) = 0
poll(

Then it blocks again...

This confuses Nagios that is running in a VM on this server.

Can the 'gettimeofday' be the problem? 'date' runs w/o delay.

Any insight would be greatly appreciated. It is not critical, but I'd
be glad to be able to finally pinpoint and solve the problem.

Hardware: HP Netserver, software raid, SCSI disks, 1.7 GB RAM.

I can provide more information if needed.

Thanks,

Ugo

Subject: Re: Weird performance problem
Posted by maratrus on Tue, 28 Apr 2009 11:34:47 GMT
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Hello,

what kernel do you use?

So, the provided vmstat output show that CPU is idle.
The only thing I can assume for now is that somebody disables interrupts and thus "missed * ticks" messages appeared and network packets handling is delayed.
Do you have any assumptions?
BTW, does "service vz stop" resolve the problem or the problem takes place when vz service is stopped?

It may be useful to gather alt-sysrq-* outputs:
Alt-SysRQ-
1) "m" - for memory info dump
2) "p" - for registers - several times, please, twice the number of CPUs
3) "a" - for scheduler stat - 3 times
4) "w" - another scheduler info - 3 times
5) "t" - for all processes calltraces. Warning - this is a resource consuming operation. At least -

twice.

Subject: Re: Weird performance problem
Posted by ugob on Tue, 28 Apr 2009 12:53:11 GMT
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I was using kernel 2.6.18-92.1.18.el5.028stab060.2, now I<m using 2.6.18-92.1.18.el5.028stab060.8. I was previously using PAE kernel, now I'm trying the non-PAE kernel. I only have 1.7 GB RAM anyway. The problem hasn't occured yet since the last reboot.

Thanks,

Ugo

Subject: Re: Weird performance problem
Posted by ugob on Tue, 28 Apr 2009 12:55:56 GMT
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service vz restart didn't solve the problem, the next time it occurs, I'll try a service vz stop.

I don't have a KVM on this server, so it may be hard for me to get the results of alt-sysreq commands.

Ugo