Subject: Application is being killed by kernel with signal 11
Posted by iziz on Tue, 31 Oct 2006 16:44:51 GMT
View Forum Message <> Reply to Message

Hello,

I use PostgreSQL server inside OpenVZ VE. From time to time it falls saying that one of the backends exited abnormally (after 11 signal) and possibly corrupted shared memory. This leads to whole server restart which is highly undesirable in my setup.

I checked your wiki and adjusted UBC accordingly to 4GB of RAM I have on physical machine (I set up beancounters to have some free resources for future but also big enough to have PostgreSQL stable working as I thought). Here is my /proc/user_beancounters file:

```
uid resource       held     maxheld     barrier       limit failcnt
98076:
kmemsize       21901424   36869261   70451200   71000000 0
lockedpages          0          0         64         64 0
privvmpages     279568     299439    1560000    1572864 0
shmpages        243748     243764     327680     327680 0
dummy                0          0          0          0 0
numproc             33         45        650        650 0
physspages      266354     275590          0 2147483647 0
vmguarpages          0          0     524288 2147483647 0
oomguarpages    267917     277186     524288 2147483647 0
numtcpsock          20         34        800        800 0
numflock             2          5        400        440 0
numpty               2          2         16         16 0
numsiginfo           0          3        256        256 0
tcpsndbuf         6684     204976    3194880    5242880 0
tcprcvbuf            0      19900    3194880    5242880 0
othersockbuf    122540     498476    1320960    4000000 0
dgramrcvbuf          0     185856    1320960    1320960 0
numothersock        81         90       1000       1000 0
dcachesize      256004     327754    4915200   54067200 0
numfile           1660       2781      12800      12800 0
dummy                0          0          0          0 0
dummy                0          0          0          0 0
dummy                0          0          0          0 0
numiptent           19         19        128        128 0
```

So the questions are:

1. Why does kernel kill PostgreSQL with SIGSEGV?
2. Why don't I see increments in fail counters?
3. How is that possible to understand what resource limit (if I'm right in my assumption that kernel kills PostgreSQL because of resource limits excess) PostgreSQL tried to exceed given all maxheld values?

4. What's wrong with these UBC?

Forgot to tell:

[root@pg1 ~]# uname -r
2.6.8-022stab078.21.ipsec.1-enterprise

Hope that someone can help me.

Subject: Re: Application is being killed by kernel with signal 11
Posted by glowfish on Wed, 01 Nov 2006 11:28:58 GMT
View Forum Message <> Reply to Message

We have the same issue but with Teamspeak running in our VPS´es..

After we did the latest update to OpenVZ yesterday we can not start a single teamspeak server for our customers anymore.

Teamspeak is using an SQL Lite Database.

Thats what i get from strace:

strace ./server_linux
execve("./server_linux", ["./server_linux"], [/* 10 vars */]) = 0
+++ killed by SIGKILL +++

Daniel

Subject: Re: Application is being killed by kernel with signal 11
Posted by Antarion on Wed, 01 Nov 2006 14:27:04 GMT
View Forum Message <> Reply to Message

I've opened Bug #332 (http://bugzilla.openvz.org/show_bug.cgi?id=332) which is covering the teamspeak issues.

@Kir/Dev: I would very much appreciate a quick solution/workaround.

Many Thanks!

-Torsten

Subject: Re: Application is being killed by kernel with signal 11

Posted by dev on Wed, 01 Nov 2006 15:44:46 GMT
View Forum Message <> Reply to Message

hey, it looks totally different!
the original report is about SIGSEGV (signal 11) on 2.6.8 kernel,
while you report SIGKILL (signal 9) on 2.6.9.

Don't mess it please

Subject: Re: Application is being killed by kernel with signal 11
Posted by iziz on Thu, 02 Nov 2006 15:40:34 GMT
View Forum Message <> Reply to Message

So what about SIGSEGV and my situation?

Are beancounters considered to be reliable and stable system with no bugs known among the community? Or they tend to have issues like mine (that is difficult to understand) from time to time?

Is it possible to turn some detailed logging on to see what's happened and why these kills occured?

If I switch on core dumps will they be able to clarify the situation?

Any help would be greatly appreciated.

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Thu, 02 Nov 2006 15:54:30 GMT
View Forum Message <> Reply to Message

SIGSEGV is sent by kernel usually when application tries to access memory by invalid pointer.
The typical reasons for this are:
1. memory corruptions. check your hardware according to http://wiki.openvz.org/Hardware_testing

2. bugs in software. this can be caught by:
a) adding kernel messages when SIGSEGV is sent.
for example, for i386 arch check arch/i386/mm/fault.c, function do_page_fault():

```
<skipped>
bad_area:
        up_read(&mm->mmap_sem);

bad_area_nosemaphore:
        /* User mode accesses just cause a SIGSEGV */
        if (error_code & 4) {
```

```
        /*
         * Valid to do another page fault here because this one came
         * from user space.
         */
        if (is_prefetch(regs, address, error_code))
                return;

        tsk->thread.cr2 = address;
        /* Kernel addresses are always protection faults */
        tsk->thread.error_code = error_code | (address >= TASK_SIZE);
        tsk->thread.trap_no = 14;
        info.si_signo = SIGSEGV;
        info.si_errno = 0;
        /* info.si_code has been set above */
        info.si_addr = (void __user *)address;
        force_sig_info(SIGSEGV, &info, tsk);
        return;
}
```

SIGSEGV is sent above by force_sig_info(), so what you can do here is to print application eip address (regs->eip) to check where its problem occurs.

b) debug application with gdb to see where it gets SIGSEGV.
c) save core dump from an application and analyze it later.

Subject: Re: Application is being killed by kernel with signal 11
Posted by iziz on Thu, 02 Nov 2006 15:58:55 GMT
View Forum Message <> Reply to Message

Ok, thanks for detailed reply.

Could you please tell my how to turn coredumps on in OpenVZ? Where then am I be able to find them?

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Thu, 02 Nov 2006 16:05:51 GMT
View Forum Message <> Reply to Message

You are welcome!

AFAIK, ulimit -c as on any other distro.

by default cores are disabled:
[dev@localhost vzctl]$ ulimit -a

core file size (blocks, -c) 0

Subject: Re: Application is being killed by kernel with signal 11
Posted by iziz on Thu, 02 Nov 2006 16:14:17 GMT
View Forum Message <> Reply to Message

I enabled core dumps on my system. Now I'll be waiting for the PostgreSQL to be killed. Hope you'll help me with core dump analysis

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Thu, 02 Nov 2006 16:34:59 GMT
View Forum Message <> Reply to Message

If possible I suggest to check memory first. this can save a lot of time for me and you.

Subject: Re: Application is being killed by kernel with signal 11
Posted by iziz on Thu, 02 Nov 2006 16:51:22 GMT
View Forum Message <> Reply to Message

I have experienced memory corruption several times in my life but do not see anything similar on that here. Faults are not random, they occur under heavy load and look very similar to each other. Moreover, PostgreSQL also was killed several times with 9 signal because of kmemsize exceed, I managed to trace it. After kmemsize barrier increase it seems to be OK.

So I suppose beancounters settings here but not a memory corruption. Anyway, the server is remote and in production envirоinment so even if I schedule memory check there, it can be carried out not earlier than 2-3 weeks from now. And I'm expecting to have first core dump on this week already

Also, it's a Dell server with rich self-testing equipment that should have notified me in case of RAM problems.

Subject: Re: Application is being killed by kernel with signal 11
Posted by lcslouis on Wed, 13 Dec 2006 07:26:52 GMT
View Forum Message <> Reply to Message

from what i have read this problem has been fixed by the most recent 2.6.9 Virtuozzo Kernel Release so any chance with the openvz kernel being updated with the same fixes?
this is the bugzilla thing http://bugzilla.openvz.org/show_bug.cgi?id=332 how do you apply this fix or when will the new kernel be available for download?

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Wed, 13 Dec 2006 08:46:44 GMT
View Forum Message <> Reply to Message

it is 99% unlikely that it is related to your problem. signal number is different. you can apply this patch yourself and check. kernel will be published soon.

Subject: Re: Application is being killed by kernel with signal 11
Posted by lcslouis on Wed, 13 Dec 2006 08:50:17 GMT
View Forum Message <> Reply to Message

well teamspeak is giving me the process killed and from what bug 332 says its my problem exactly. the thing is i have no idea how to apply the fix. and how soon we looking i am already behind schedule as it is this kernel problem only puts me more behind. not to mention i have a lot of angry people.

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Wed, 13 Dec 2006 08:55:44 GMT
View Forum Message <> Reply to Message

not, a problem. I will upload it for you here:
http://download.openvz.org/~dev/023stab037.2/
it will take ~10-15 minutes...

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Wed, 13 Dec 2006 08:59:41 GMT
View Forum Message <> Reply to Message

please, if you experience the problem and what it to be fixed sooner report this in the bug, otherwise we can be not in a big hurry if the original reporter just applied the fix and is happy.

Subject: Re: Application is being killed by kernel with signal 11
Posted by lcslouis on Wed, 13 Dec 2006 09:30:46 GMT
View Forum Message <> Reply to Message

ok just 1 question how do i upgrade the openvz kernel by itself because it is trying to upgrade the system kernel which is wrong i used yum originally to install openvz should i edit my boot config go back into the old kernel and run the upgrade? or how should i proceed i haven't done an

upgrade to extent before and don't want to mess up. I have no physical access to the box.

Subject: Re: Application is being killed by kernel with signal 11
Posted by dev on Wed, 13 Dec 2006 09:36:08 GMT
View Forum Message <> Reply to Message

you don't need to upgrade, i.e. doing rpm -Uhv,
you need to install the kernel with rpm -ihv
thus all previous kernels will be left on the system.

Subject: Re: Application is being killed by kernel with signal 11
Posted by lcslouis on Wed, 13 Dec 2006 13:42:48 GMT
View Forum Message <> Reply to Message

ok its installed and it fixes the problem teamspeak is running smooth.