Subject: [migration/0] 100% CPU
Posted by berlo on Fri, 19 Aug 2011 19:14:44 GMT
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hi,
some days ago i moved some my nodes to CentOS 6. After migration i see that centos 5 node still stable, but migrated centos 6 module random crash. i have some screen during the crash. I do not think that is something in cron because crash are randon and in different node.

All nodes went offline with this status:

top - 19:26:07 up 1 day, 5:35, 2 users, load average: 10.59, 2.90, 1.30
Tasks: 985 total, 5 running, 976 sleeping, 0 stopped, 4 zombie
Cpu(s): 0.7%us, 26.0%sy, 0.0%ni, 0.0%id, 73.2%wa, 0.0%hi, 0.1%si, 0.0%st
Mem: 8296140k total, 6580416k used, 1715724k free, 460436k buffers
Swap: 10403832k total, 14496k used, 10389336k free, 3686296k cached

```
  PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
    3 root      RT   0     0    0    0 S 100.0  0.0   1:10.82 [migration/0]
28697 root      20   0  3184 1716  888 R  1.6  0.0   5:55.67 top -c
16168 root      20   0  3172 1752  888 S  1.3  0.0  14:04.70 top -c
 9766 105       20   0  364m  18m 4940 S  0.6  0.2  10:01.93 /usr/bin/python
/usr/lib/checker/Checker.py -c /etc/checker.conf
21873 root      20   0 74848  32m 7264 S  0.6  0.4   1:20.45 ./hlds_i686 -console -game cstrike
-master -secure -pingboost 3 +ip 213.92.118.171 +sys_ticrate 20 -heapsize 100 +exec
xhlds1.cfg?
12217 apache    20   0 35444 1916  592 S  0.3  0.0   4:59.34
/var/www/html/cast/files/linux/sc_serv temp/8000_1313668473.conf
12580 apache    20   0 42144 1780  564 S  0.3  0.0   4:58.78
/var/www/html/cast/files/linux/sc_serv temp/8002_1313668474.conf
12662 apache    20   0 38704 2132  752 S  0.3  0.0   5:13.15
/var/www/html/cast/files/linux/sc_serv temp/8004_1313668479.conf
13124 33        20   0 40600  11m 3920 D  0.3  0.1   0:01.80 /usr/sbin/apache2 -k start
13874 apache    20   0 35444 1828  564 S  0.3  0.0   4:58.83
/var/www/html/cast/files/linux/sc_serv temp/8006_1313668490.conf
14201 33        20   0 39832  11m 3940 D  0.3  0.1   0:01.20 /usr/sbin/apache2 -k start
14382 apache    20   0 35944 2156  756 S  0.3  0.0   5:17.00
/var/www/html/cast/files/linux/sc_serv temp/8010_1313668497.conf
15512 apache    20   0 35944 2252  752 S  0.3  0.0   5:30.24
/var/www/html/cast/files/linux/sc_serv temp/8008_1313668517.conf
15907 65534     20   0 1173m  45m  44m D  0.3  0.6   0:30.02 /usr/sbin/varnishd -P
/var/run/varnishd.pid -a :80 -T localhost:6082 -f /etc/varnish/default.vcl -S /etc/varnish/secret -s
file,/var/lib/varnish/vps-it/varnish_storage.bin,1G
21882 root      20   0 74848  32m 7268 S  0.3  0.4   1:19.77 ./hlds_i686 -console -game cstrike
-master -secure -pingboost 3 +ip 213.92.118.171 +sys_ticrate 20 -heapsize 100 +exec xhlds3.cfg
21883 root      20   0 74848  32m 7348 S  0.3  0.4   1:19.73 ./hlds_i686 -console -game cstrike
-master -secure -pingboost 3 +ip 213.92.118.171 +sys_ticrate 20 -heapsize 100 +exec
```

xhlds2.cfg?

```
    1 root      20   0  2828 1356 1192 S  0.0  0.0   0:01.05 /sbin/init
    2 root      20   0     0    0    0 S  0.0  0.0   0:00.00 [kthreadd]
    4 root      20   0     0    0    0 R  0.0  0.0   0:00.57 [ksoftirqd/0]
    5 root      RT   0     0    0    0 S  0.0  0.0   0:00.00 [migration/0]
    6 root      RT   0     0    0    0 R  0.0  0.0   0:00.04 [watchdog/0]
    7 root      RT   0     0    0    0 S  0.0  0.0   0:00.42 [migration/1]
    8 root      RT   0     0    0    0 S  0.0  0.0   0:00.00 [migration/1]
    9 root      20   0     0    0    0 S  0.0  0.0   0:01.69 [ksoftirqd/1]
   10 root      RT   0     0    0    0 S  0.0  0.0   0:00.04 [watchdog/1]
   11 root      RT   0     0    0    0 S  0.0  0.0   0:01.03 [migration/2]
   12 root      RT   0     0    0    0 S  0.0  0.0   0:00.00 [migration/2]
   13 root      20   0     0    0    0 S  0.0  0.0   0:01.72 [ksoftirqd/2]
   14 root      RT   0     0    0    0 S  0.0  0.0   0:00.05 [watchdog/2]
   15 root      RT   0     0    0    0 S  0.0  0.0   0:01.01 [migration/3]
   16 root      RT   0     0    0    0 S  0.0  0.0   0:00.00 [migration/3]
   17 root      20   0     0    0    0 S  0.0  0.0   0:01.68 [ksoftirqd/3]
   18 root      RT   0     0    0    0 S  0.0  0.0   0:00.04 [watchdog/3]
   19 root      20   0     0    0    0 R  0.0  0.0   0:00.24 [events/0]
   20 root      20   0     0    0    0 S  0.0  0.0   0:09.13 [events/1]
   21 root      20   0     0    0    0 S  0.0  0.0   0:01.79 [events/2]
```

i know that process [migration/0] is a kernel thread that move thread between cpu's but i don't know what cause this situation.

Anyone had this problem or know how to solve or debug it?

configuration:

```
# uname -a
Linux node82 2.6.32-042stab031.1 #1 SMP Fri Aug 12 21:21:55 MSD 2011 i686 i686 i386 GNU/Linux
```

```
# lspci
00:00.0 Host bridge: Intel Corporation 5000X Chipset Memory Controller Hub (rev 12)
00:02.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 2 (rev 12)
00:03.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 3 (rev 12)
00:04.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x8 Port 4-5 (rev 12)
00:05.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 5 (rev 12)
00:06.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x8 Port 6-7 (rev 12)
00:07.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 7 (rev 12)
00:10.0 Host bridge: Intel Corporation 5000 Series Chipset FSB Registers (rev 12)
00:10.1 Host bridge: Intel Corporation 5000 Series Chipset FSB Registers (rev 12)
00:10.2 Host bridge: Intel Corporation 5000 Series Chipset FSB Registers (rev 12)
00:11.0 Host bridge: Intel Corporation 5000 Series Chipset Reserved Registers (rev 12)
```

00:13.0 Host bridge: Intel Corporation 5000 Series Chipset Reserved Registers (rev 12)
00:15.0 Host bridge: Intel Corporation 5000 Series Chipset FBD Registers (rev 12)
00:16.0 Host bridge: Intel Corporation 5000 Series Chipset FBD Registers (rev 12)
00:1c.0 PCI bridge: Intel Corporation 631xESB/632xESB/3100 Chipset PCI Express Root Port 1 (rev 09)
00:1d.0 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #1 (rev 09)
00:1d.1 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #2 (rev 09)
00:1d.2 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #3 (rev 09)
00:1d.3 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #4 (rev 09)
00:1d.7 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset EHCI USB2 Controller (rev 09)
00:1e.0 PCI bridge: Intel Corporation 82801 PCI Bridge (rev d9)
00:1f.0 ISA bridge: Intel Corporation 631xESB/632xESB/3100 Chipset LPC Interface Controller (rev 09)
00:1f.1 IDE interface: Intel Corporation 631xESB/632xESB IDE Controller (rev 09)
01:00.0 RAID bus controller: LSI Logic / Symbios Logic MegaRAID SAS 1078 (rev 04)
02:00.0 PCI bridge: Broadcom EPB PCI-Express to PCI-X Bridge (rev c3)
03:00.0 Ethernet controller: Broadcom Corporation NetXtreme II BCM5708 Gigabit Ethernet (rev 12)
04:00.0 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express Upstream Port (rev 01)
04:00.3 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express to PCI-X Bridge (rev 01)
05:00.0 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express Downstream Port E1 (rev 01)
05:01.0 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express Downstream Port E2 (rev 01)
06:00.0 PCI bridge: Broadcom EPB PCI-Express to PCI-X Bridge (rev c3)
07:00.0 Ethernet controller: Broadcom Corporation NetXtreme II BCM5708 Gigabit Ethernet (rev 12)
0e:0d.0 VGA compatible controller: ATI Technologies Inc ES1000 (rev 02)

# cat /etc/redhat-release
CentOS Linux release 6.0 (Final)

thank you

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Subject: Re: [migration/0] 100% CPU
Posted by bjdea1 on Tue, 23 Aug 2011 14:01:12 GMT
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I think this might be the similar to what I have seen on my server node with centos 6

2.6.32-042stab031.1 kernel when the server crashed twice in about 2 weeks. Same mention of migration issue in /var/log/messages with process getting stuck in single CPU for 67 seconds and causes crash.
kernel: [633492.036001] BUG: soft lockup - CPU#0 stuck for 67s! [migration/0:3]

Subject: Re: [migration/0] 100% CPU
Posted by berlo on Tue, 23 Aug 2011 14:04:41 GMT
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hi,
yes is same issue. I opened a bug request and received this:

# echo 0 > /proc/sys/kernel/sched_cpulimit_nr_balance

Now are two days that i do not have crash. Usually server crash every 1-2 days, but i will wait some days to mark as resolved.

Have you tried this solution?

Subject: Re: [migration/0] 100% CPU
Posted by bjdea1 on Tue, 23 Aug 2011 14:26:01 GMT
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Ok I am trying this, hope it works, thanks.

Subject: Re: [migration/0] 100% CPU
Posted by deziweb on Fri, 26 Aug 2011 12:07:59 GMT
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We have experienced the same issue after upgrading some hosts to CentOS 6: a proces migration/0 eating up 100% CPU. Load rises within 15 minutes from 2 to 300+ and eventually the system crashes.

I've now set the proc/sys/kernel/sched_cpulimit_nr_balance to 0.

Does anyone know if this resolves the issue?

Subject: Re: [migration/0] 100% CPU
Posted by berlo on Mon, 29 Aug 2011 10:37:49 GMT
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hi,
 is a wordaround, but this operation solve the issue.

Developer proposed a patch, i tested it and seems working great. Read here: http : / / bugzilla.openvz.org/show_bug.cgi?id=1954

Regards

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Subject: Re: [migration/0] 100% CPU
Posted by deziweb on Thu, 15 Sep 2011 09:38:51 GMT
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Since we've changed it manually by setting it to 0 it has worked fine for us as well. However, I'm still running Kernel RHEL6 042stab033.1 and when I do a reboot of the server, it's set back to 4 again, which will cause it crash again in a very short time.

I've now upgraded to kernel vzkernel-2.6.32-042stab036.6. but I'm not sure if it's corrected already in this kernel. Can somebody confirm this please?

Thank you.

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