Subject: occasional high loadavg without any noticeable cpu/memory/io load
Posted by Rene Dokbua on Mon, 21 May 2012 18:06:53 GMT
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Hello,

I occasionally get this extreme load on one of our VPS servers. It is quite large, 4 full E31230 cores, 4 GB RAM and hosting ca. 400 websites + parked/addon/subdomains.

The hardware node has 12 active VPS servers and most of the time things are chugging along just fine, something like this.

1401: 0.00 0.00 0.00 1/23 4561
1402: 0.02 0.05 0.05 1/57 16991
1404: 0.01 0.02 0.00 1/73 18863
1406: 0.07 0.13 0.06 1/39 31189
1407: 0.86 1.03 1.14 1/113 31460
1408: 0.17 0.17 0.18 1/79 32579
1409: 0.00 0.00 0.02 1/77 21784
1410: 0.01 0.02 0.00 1/60 7454
1413: 0.00 0.00 0.00 1/46 18579
1414: 0.00 0.00 0.00 1/41 23812
1415: 0.00 0.00 0.00 1/45 9831
1416: 0.05 0.02 0.00 1/59 11332
12 active

The problem VPS is 1407. As you can see below it only uses a bit of the cpu and memory.

top - 17:34:12 up 32 days, 12:21, 0 users, load average: 0.78, 0.95, 1.09
Tasks: 102 total, 4 running, 90 sleeping, 0 stopped, 8 zombie
Cpu(s): 16.3%us, 2.9%sy, 0.4%ni, 78.5%id, 1.8%wa, 0.0%hi, 0.0%si, 0.1%st
Mem: 4194304k total, 2550572k used, 1643732k free, 0k buffers
Swap: 8388608k total, 105344k used, 8283264k free, 1793828k cached

Also iostat and vmstat shows no particular io or swap activity.

Now for the problem. Every once in a while the loadavg of this particular VPS shoots up to like crazy values, 30 or more and it becomes completely sluggish. The odd thing is load goes up for the VPS server, and starts spilling into other VPS serers on the same hardware node - but there are still no particular cpu/memory/io usage going on that I can se. No particular network activity. In this example load has fallen back to around 10 but it was much higher earlier.

16:19:44 up 32 days, 11:19, 3 users, load average: 12.87, 19.11, 18.87

1401: 0.01 0.03 0.00 1/23 2876
1402: 0.00 0.11 0.13 1/57 15334
1404: 0.02 0.20 0.16 1/77 14918
1406: 0.01 0.13 0.10 1/39 29595
1407: 10.95 15.71 15.05 1/128 13950
1408: 0.36 0.52 0.57 1/81 27167
1409: 0.09 0.26 0.43 1/78 17851
1410: 0.09 0.17 0.18 1/61 4344
1413: 0.00 0.03 0.00 1/46 16539
1414: 0.01 0.01 0.00 1/41 22372
1415: 0.00 0.01 0.00 1/45 8404
1416: 0.05 0.10 0.11 1/58 9292
12 active

top - 16:20:02 up 32 days, 11:07, 0 users, load average: 9.14, 14.97, 14.82
Tasks: 135 total, 1 running, 122 sleeping, 0 stopped, 12 zombie
Cpu(s): 16.3%us, 2.9%sy, 0.4%ni, 78.5%id, 1.8%wa, 0.0%hi, 0.0%si, 0.1%st
Mem: 4194304k total, 1173844k used, 3020460k free, 0k buffers
Swap: 8388608k total, 115576k used, 8273032k free, 725144k cache

Notice how cpu is plenty idle, and only 1/4 of the available memory is being used.

http://wiki.openvz.org/Ploop/Why explains "One such property that deserves a special item in this list is file system journal. While journal is a good thing to have, because it helps to maintain file system integrity and improve reboot times (by eliminating fsck in many cases), it is also a bottleneck for containers. If one container will fill up in-memory journal (with lots of small operations leading to file metadata updates, e.g. file truncates), all the other containers I/O will block waiting for the journal to be written to disk. In some extreme cases we saw up to 15 seconds of such blockage.". The problem I noticed last much longer than 15 seconds though - typically 15-30 minutes, then load goes back where it should be.

Any suggestions where I could look for the cause of this? It's not like it happens everyday, maybe once or twice per month, but it's enough to cause customers to complain.

Regards,
Rene