Subject: Measuring and Adjusting CPU utilization
Posted by Pradeep Padala on Tue, 06 Jun 2006 18:03:37 GMT
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Hi,

I am trying to measure the CPU utlilization of the VZ containers, and change the cpu share dynamically. I have poured over most of the documentation, and looked at the code as well, and it seems like there's no utility that can directly show the current CPU utilization of a container (some thing like 30% of CPU). A search on the user list got me a message, where someone suggested using loadavg. However, It seems like the loadavg is not showing the proper utilization (or showing the total CPU utilization). This is what I am doing.

I setup a container with 1000 units limit (total CPU units: ~10000). I wrote a small do {; }while(1); loop and ran it in the container, now I do cat /proc/loadavg in both the container and on the host node. Since, the container is only using 1000 units, I should see something like 100% loadavg in the container, and 10% loadavg in the hostnode. But, I see 100% at both places. Am I doing something wrong? How do I get the current cpu utilization of a container?

Thanks,
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Pradeep Padala
http://ppadala.blogspot.com

Subject: Re: Measuring and Adjusting CPU utilization
Posted by kir on Tue, 06 Jun 2006 23:17:15 GMT
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Looks like you misunderstand the concept of cpuunits. cpuunits is not a hard limit, but just a suggestion, and a CPU time is shared proportionally to the values given. So, if you will have 9 VEs and the host system with cpuunits set to 1000 for all of them, and run the loop in all of them, each VE will use 10% of the CPU time.

In case you will stop the loop running in 5 VEs so there will be 4 such VEs (plus the host system) left, each of them will use 20% of the CPU. So, all the CPU time is distributed between VEs which will need it, according with their proportional cpuunits.

More to say, the concept of "total CPU units" is purely fiction, and is here just for the convenience. People do want to set CPU units is terms of processor's megaherts, and this is what cpuunits does. But in fact it is not a megaherts but just a relative weights. I.e. all the cpuunits

values are relative to each other, it doesn't matter what the actual numbers are -- what matters is a number given to a VE in relation to the sum of all cpuweights (which is expressed as "total CPU units" just for the convenience).

So, cpuunits, if you do not oversell them, are a CPU guarantee, not a limit. If you want CPU limit -- use cpulimit parameter.

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Posted by Pradeep Padala on Tue, 06 Jun 2006 23:27:32 GMT
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Subject: Re: Measuring and Adjusting CPU utilization
Posted by kir on Wed, 07 Jun 2006 00:12:43 GMT
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CPU limit is in per cent units. I.e. if your server has a single CPU,
use --cpulimit 10 to limit a VE to 10% of the CPU.

On a two-way SMP box max. value of cpulimit is 200. Say, if you want a
VE to use no more than one CPUs, use --cpulimit 100.

Pradeep Padala wrote:

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> > ---------- ----------
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> >_____
> >Users mailing list
> >Users@openvz.org <mailto:Users@openvz.org>
> >https://openvz.org/mailman/listinfo/users
> <https://openvz.org/mailman/listinfo/users>
> >
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> _____
> Users mailing list
> Users@openvz.org <mailto:Users@openvz.org>
> https://openvz.org/mailman/listinfo/users
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Subject: Re: Measuring and Adjusting CPU utilization
Posted by Pradeep Padala on Wed, 07 Jun 2006 00:33:23 GMT
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I can add up the CPU% for all the processes running in the container, and can get the current % utilization of the container. Is there a better way to

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Subject: Re: Measuring and Adjusting CPU utilization
Posted by dev on Wed, 07 Jun 2006 08:20:05 GMT
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This is also correct, since load average means 'average number of
processes in running + uninterruptible state'. Since you busy loop is

constantly in running state, it is accounted as 1.0 in loadavg.

> I can add up the CPU% for all the processes running in the container,
> and can get the current % utilization of the container. Is there a
> better way to do this?
Sorry, didn't got what you mean... Probably you ask how to calculate the
amount of CPU being consumed by VPS in %?
To do so, you need to monitor /proc/vz/vestat file.
 http://forum.openvz.org/index.php?t=msg&goto=2790&&a mp;srch=vestat#msg_2790

Thanks,
Kirill

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