Subject: Memory calculations
Posted by Jeff Blasius on Sat, 22 Dec 2007 00:01:08 GMT
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VZ users-

Can someone explain to me how vzcalc calculates the current and max
Mem? I initially thought Promised% was based upon VMGUAR and Max% was
based upon PRIVVM, but that doesn't seem to be the case. I believe I'm
allowing 128MB of guaranteed mem and 512MB burstable using the
parameters below. Is that true? The HN below has 32GB ram 64GB swap.

```
$  /etc/vz/conf/3166.conf
VMGUARPAGES="31250:9223372036854775807"
OOMGUARPAGES="31250:9223372036854775807"
PRIVVMPAGES="125000:150000"
```

```
$ vzcalc -v 3166
Resource     Current(%)  Promised(%)  Max(%)
Low Mem       0.04       0.53       0.53
Total RAM     0.10       n/a        n/a
Mem + Swap    0.03       0.20        n/a
Alloc. Mem    0.05       0.20       0.68
Num. Proc     0.00       n/a        0.15
-------------------------------------------
Memory        0.10       0.53       0.68
```

Thank You for the great software! It has dramatically improved the way we work.
            -jeff

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Subject: Re: Memory calculations
Posted by vaverin on Mon, 24 Dec 2007 10:59:55 GMT
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http://wiki.openvz.org/UBC_systemwide_configuration
man vzcalc

Subject: Re: Re: Memory calculations

Hello Vaverin,
Yes, believe me, I've read the documentation and it's generally very
good. But, for this particular point I just don't follow it. Maybe
it's just me.

So, man vzcalc says little more than: (resourses should be resources btw)
Promised - shows the resourses soft limit values "promised" for a given VE.
Max - shows the resourses hard limit values "promised" for a given VE.

This basically just redefines the terms promised and max, but doesn't
relate them to openvz beancounters in any way. From my numbers it
appears that
Promised = PRIVVMPAGES * 4096 / Ram + Swap
and
Max = (PRIVVMPAGES * 4096 / Ram + Swap) + Num. Proc

Assuming Num. Proc relates to the beancounter numproc,
Num. Proc = Num. of processes within the VE / 16000 (from
http://wiki.openvz.org/Numproc#numproc)
Is this correct?

I think my problems with the above are two things.
1. I'm not certain where max comes from and if it does come from the
above inferred formulas why it's really useful. I mean it's the
maximum of two seemingly independent beancounters. and
2. Promised seems like a misleading word (if in fact it does relate to
PRIVVMPAGES) since VMGUARPAGES is actually the "allocation guarantee".

Thanks,
        jeff

On Dec 24, 2007 5:59 AM, vaverin <vvs@sw.ru> wrote:
>
>
> http://wiki.openvz.org/UBC_systemwide_configuration
> man vzcalc
--
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Subject: Re: Re: Memory calculations

Posted by vaverin on Tue, 08 Jan 2008 12:42:03 GMT

Hi Jeff,

Jeff Blasius wrote on Fri, 04 January 2008 21:36So, man vzcalc says little more than: (resourses should be resources btw)

thank you, I've fixed this typo

Quote:This basically just redefines the terms promised and max, but doesn't relate them to openvz beancounters in any way.

Is this correct?

You can take a look at the sources of vzcalc here:
  http://git.openvz.org/?p=vzctl;a=blob;f=src/vzcalc.c;h=073ad
d43e95f173fbe8ffb9e9e4ada405cbf4d51;hb=HEAD
As you can see it is based on the formulas explained in the following article:
http://wiki.openvz.org/UBC_systemwide_configuration

Quote:
I think my problems with the above are two things.
1. I'm not certain where max comes from and if it does come from the above inferred formulas why it's really useful. I mean it's the maximum of two seemingly independent beancounters. and
2. Promised seems like a misleading word (if in fact it does relate to PRIVVMPAGES) since VMGUARPAGES is actually the "allocation guarantee".

At the first glance this utility just checks systemwide configuration. However I tend to agree that "promised" is misleading word here.

thank you,
Vasily Averin