
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

Posted by [Jeff Blasius](#) on Fri, 04 Jan 2008 18:36:16 GMT

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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: (resources should be resources btw)
Promised - shows the resources soft limit values "promised" for a given VE.
Max - shows the resources 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 = $\text{PRIVVMPAGES} * 4096 / \text{Ram} + \text{Swap}$

and

Max = $(\text{PRIVVMPAGES} * 4096 / \text{Ram} + \text{Swap}) + \text{Num. Proc}$

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 <vvvs@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

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Hi Jeff,

Jeff Blasius wrote on Fri, 04 January 2008 21:36So, man vzcalc says little more than: (resources 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=073ad43e95f173fbe8ffb9e9e4ada405cbf4d51;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.

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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
