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Subject: fake swap != 0 in VE?

Posted by [Thomas Sattler](#) on Mon, 11 Feb 2008 18:23:16 GMT

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Hi there ...

I'm running a software here, inside a VE,  
that checks the amount of available swap  
and complains if it thinks there isn't  
enough.

The VE has plenty of RAM, swap will \*never\*  
be used. But there are lots of popups about  
missing swap all the time. :-(

Running 'free' in the VE shows no swap. Can  
I fake some swapspace to prevent the popups?

Thomas

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Subject: Re: fake swap != 0 in VE?

Posted by [Alex Prinsier](#) on Mon, 11 Feb 2008 18:26:55 GMT

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1) I'd say that software sucks. You better somehow disable the check,  
even if it requires editing the code.

2) Perhaps you could use a file as swap instead of a normal swap  
partition (google for that). You can make the size of that file really  
small. However I'm really not so sure that you can mount a swap file in  
openvz. It's worth a try.

Alexander

Thomas Sattler wrote:

> Hi there ...

>

> I'm running a software here, inside a VE,  
> that checks the amount of available swap  
> and complains if it thinks there isn't  
> enough.

>

> The VE has plenty of RAM, swap will \*never\*  
> be used. But there are lots of popups about  
> missing swap all the time. :-(

>

> Running 'free' in the VE shows no swap. Can

> I fake some swapspace to prevent the popups?  
>  
> Thomas  
>

---

Subject: Re: fake swap != 0 in VE?

Posted by [Thomas Sattler](#) on Mon, 11 Feb 2008 20:42:38 GMT

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Alexander Prinsier wrote:

> 1) I's say that software sucks. You better somehow disable the check,  
> even if it requires editing the code.

It's a closed source application, I can't do anything here. This really sucks. Perhaps its developers will have a look, perhaps they won't. :-/

> 2) Perhaps you could use a file as swap instead of a normal swap  
> partition (google for that). You can make the size of that file really  
> small. However I'm really not so sure that you can mount a swap file in  
> openvz. It's worth a try.

I know about swapfiles. But swap is a system global thing and must be done in the HN not in the VE's:

```
# dd if=/dev/zero of=swap bs=1M count=32
32+0 records in
32+0 records out
33554432 bytes (34 MB) copied, 0.075684 seconds, 443 MB/s
```

```
# mkswap swap
Setting up swapspace version 1, size = 33550 kB
```

```
# swapon swap
swapon: swap: Operation not permitted
```

BTW: The HN uses swap:

```
# cat /proc/swaps
Filename                Type      Size  Used
Priority
/dev/md1                 partition 3903672 0    -1
```

It's only that the VE's don't know about that. So I need to tell them -- or fake it. That's what I asked for.

Thomas

---

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Subject: Re: fake swap != 0 in VE?

Posted by [Michael Klatsky](#) on Mon, 11 Feb 2008 21:08:12 GMT

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We have, unfortunately, run into a similar situation.

Our app requires swap as well, and, while you can set up a VE such that issuing 'free' will show both RAM and swap- it will be that of the HN. And, unfortunately, our app requires swap to be seen as part of the VE, as in issuing a 'df'. I have tried making a swapfile and mounting (swapon) with the same errors. It doesn't appear possible for the VE to really show swap. Unfortunately, for our particular app, we may need to use XEN.

On 2/11/08, Thomas Sattler <sattler@med.uni-frankfurt.de> wrote:

> Alexander Prinsier wrote:

> > 1) I's say that software sucks. You better somehow disable the check,  
> > even if it requires editing the code.

>

> It's a closed source application, I can't do anything here. This  
> really sucks. Perhaps its developers will have a look, perhaps  
> they won't. :-/

>

> > 2) Perhaps you could use a file as swap instead of a normal swap  
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>

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>

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> 32+0 records in

> 32+0 records out

> 33554432 bytes (34 MB) copied, 0.075684 seconds, 443 MB/s

>

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> Setting up swspace version 1, size = 33550 kB

>

> # swapon swap

> swapon: swap: Operation not permitted

>

> BTW: The HN uses swap:

>

> # cat /proc/swaps

> Filename                   Type       Size   Used

> Priority

> /dev/md1                   partition   3903672 0   -1

>

> It's only that the VE's don't know about that. So I need to  
> tell them -- or fake it. That's what I asked for.  
>  
> Thomas  
--

Sincerely,

Michael Klatsky

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Subject: Re: fake swap != 0 in VE?

Posted by [Thomas Sattler](#) on Tue, 12 Feb 2008 08:03:23 GMT

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> [...] while you can set up a VE such that issuing 'free'  
> will show both RAM and swap- it will be that of the HN.

That might be all that I need. I can't tell how  
the application checks for swap. Could someone  
give me a hint how an application (like 'free')  
can see any swap?

I'm quite sure that I do not \*need\* the swap as  
there is plenty of RAM. But the application com-  
plains if there is no swap to be seen.

Thomas

--

Dipl.-Inform.  
Thomas Sattler  
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BIC Kernstruktur

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Fax: +49 69 6301 3707

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Subject: Re: fake swap != 0 in VE?

Posted by [Kirill Korotaev](#) on Tue, 12 Feb 2008 08:46:28 GMT

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---

the only way I'm aware of is /proc/meminfo  
just patch kernel to print something non-zero there always and your application most likely will become happy.

Thomas Sattler wrote:

>> [...] while you can set up a VE such that issuing 'free'  
>> will show both RAM and swap- it will be that of the HN.

>

> That might be all that I need. I can't tell how  
> the application checks for swap. Could someone  
> give me a hint how an application (like 'free')  
> can see any swap?

>

> I'm quite sure that I do not \*need\* the swap as  
> there is plenty of RAM. But the application com-  
> plains if there is no swap to be seen.

>

> Thomas

>

---

---

Subject: Re: fake swap != 0 in VE?

Posted by [Thomas Sattler](#) on Tue, 12 Feb 2008 09:31:46 GMT

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Kirill Korotaev wrote:

> the only way I'm aware of is /proc/meminfo  
> just patch kernel to print something non-zero  
> there always and your application most likely  
> will become happy.

So far, I used kernels via

deb <http://download.openvz.org/debian-systs> etch openvz

Is there a chance that this becomes a tunable in the  
"official openvz-kernels"?

Thomas

---

---

Subject: Re: fake swap != 0 in VE?

Posted by [Kirill Korotaev](#) on Tue, 12 Feb 2008 09:43:44 GMT

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if someone cares to create patch for kernel/vzctl, why not?

Thomas Sattler wrote:

> Kirill Korotaev wrote:

>> the only way I'm aware of is /proc/meminfo

>> just patch kernel to print something non-zero

>> there always and your application most likely

>> will become happy.

>

> So far, I used kernels via

>

> deb <http://download.openvz.org/debian-systs> etch openvz

>

> Is there a chance that this becomes a tunable in the

> "official openvz-kernels"?

>

> Thomas

---

Subject: Re: fake swap != 0 in VE?

Posted by [Carl-Daniel Hailfinger](#) on Tue, 12 Feb 2008 12:13:02 GMT

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On 12.02.2008 09:46, Kirill Korotaev wrote:

> the only way I'm aware of is /proc/meminfo

> just patch kernel to print something non-zero there always and your application most likely will become happy.

>

Why not

mount --bind fakememinfo /proc/meminfo

inside the VE? Would be easiest, but the contents will not match real meminfo because they do not get updated.

Regards,

Carl-Daniel

--

<http://www.hailfinger.org/>

---

Subject: Re: fake swap != 0 in VE? (solved)

Posted by [Thomas Sattler](#) on Wed, 13 Feb 2008 09:50:49 GMT

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> Why not

> mount --bind fakememinfo /proc/meminfo  
> inside the VE? Would be easiest, but the  
> contents will not match real meminfo  
> because they do not get updated.

I didn't expect this to work ...  
... But it does. :-)

I attached a little script to be run as root  
inside a VE to fake swap. 512MB are default,  
you can change it on the commandline:

Output is, in the example above, cut at "free"  
to prevent linewrap:

```
# free -m
      total    used    free
Mem:    4096    104    3991
-/+ buffers/cache:    104    3991
Swap:     0      0      0
```

```
# openvz_fake_swap
      total    used    free
Mem:    4096    104    3991
-/+ buffers/cache:    104    3991
Swap:    512      0    512
```

```
# openvz_fake_swap 4096
      total    used    free
Mem:    4096    104    3991
-/+ buffers/cache:    104    3991
Swap:    4096      0    4096
```

Thanks a lot!  
Thomas

```
#!/bin/bash
```

```
SWAP="${1:-512}"
```

```
NEW="[$SWAP*1024]"; TEMP="{NEW//?/ }"; OLD="{TEMP:1}0"
```

```
umount /proc/meminfo 2> /dev/null
sed "/^Swap(Total|Free):/s,$OLD,$NEW," /proc/meminfo > /etc/fake_meminfo
mount --bind /etc/fake_meminfo /proc/meminfo
```

```
free -m
```

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Subject: Re: fake swap != 0 in VE? (solved)  
Posted by [Dariush Pietrzak](#) on Wed, 13 Feb 2008 13:13:15 GMT  
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On Wed, 13 Feb 2008, Thomas Sattler wrote:

> >Why not  
> >mount --bind fakememinfo /proc/meminfo  
> >inside the VE? Would be easiest, but the  
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> ... But it does. :-)  
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> I attached a little script to be run as root  
> inside a VE to fake swap. 512MB are default,  
> you can change it on the commandline:

Hmm, I find it strange that such hacks are needed, especially when openvz already does do some kind of virtualization of /proc/meminfo (if I'm interpreting this correctly, it sets max-mem from userbeancounters barrier on VE start, but subsequent online changes are ignored)

--

Key fingerprint = 40D0 9FFB 9939 7320 8294 05E0 BCC7 02C4 75CC 50D9  
Total Existence Failure

---

---

Subject: Re: fake swap != 0 in VE? (solved)  
Posted by [Michael Klatsky](#) on Wed, 13 Feb 2008 14:24:31 GMT  
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Would not the same effect be achieved using OpenVZ builtin --meminfo parameter to vzctl?

Example:

Before:

```
[root@vz-210 /]# free -m
      total    used    free   shared  buffers   cached
Mem:      4050     21   4028     0     0     0
-/+ buffers/cache:    21   4028
Swap:      0     0     0
```

Then, do:

```
vzctl set 210 --meminfo=none
```



Now:

```
[root@vz-210 /]# free -m
              total    used    free   shared  buffers   cached
Mem:          4050    1963    2087     0      84     1655
-/+ buffers/cache:    223    3826
Swap:         2047     0     2047
```

Good discussion as I am having issues with certain applications that apparently need swap.

MK

On 2/13/08, Dariush Pietrzak <ml-openvz-eyck@ddiary.eu> wrote:

> On Wed, 13 Feb 2008, Thomas Sattler wrote:

>

> > >Why not

> > >mount --bind fakememinfo /proc/meminfo

> > >inside the VE? Would be easiest, but the

> > >contents will not match real meminfo

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> --

> Key fingerprint = 40D0 9FFB 9939 7320 8294 05E0 BCC7 02C4 75CC 50D9

> Total Existence Failure

--

Sincerely,

Michael Klatsky

---

Subject: Re: fake swap != 0 in VE? (solved)

Posted by [Dariush Pietrzak](#) on Wed, 13 Feb 2008 14:52:35 GMT

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> Would not the same effect be achieved using OpenVZ builtin --meminfo

> parameter to vzctl?

oooh, this is good,

however I can't find any info/docs about this option, the only thing I found is:

"Recently Vasily Averin very clearly explained the reason but it was in Russian part of OpenVZ forum. Smile

I'll try to reproduce his idea very precisely.

The fact is that you can restrict the userspace memory via privmpages but inside VE we cannot divide it among the SWAP and RAM. In theory all VE's userspace memory can be swapped that is why

we have to represent the swap size inside VE like privmpages.

But also VE's userspace can stay in RAM so we have to take into account privmpages in RAM accounting. So we have take into account privmpages in RAM and in SWAP accounting. That is why inside VE swap is shown like zero.

But if your application uses the top/free output you can switch off /proc/meminfo virtualization by using vzctl's --meminfo parameter. And get the same /proc/meminfo like on host system."

--

Key fingerprint = 40D0 9FFB 9939 7320 8294 05E0 BCC7 02C4 75CC 50D9

Total Existence Failure

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