Subject: Problem with RAM and swap
Posted by nubio on Thu, 21 Oct 2010 18:41:12 GMT
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Hello everybody,

I need help to understand why my containers don't swap !
[Hardware@node]# free -m
```
             total       used       free     shared    buffers     cached
Mem:          7957       7863         93          0        494       1627
-/+ buffers/cache:       5741       2215
Swap:        76316         14      76301
```

Memory used by a container

[Hardware@node]# vzctl exec 122 free -m
```
             total       used       free     shared    buffers     cached
Mem:          2048       1446        601          0          0          0
-/+ buffers/cache:       1446        601
Swap:      4194303          0    4194303
```

It doesn't swap .. and i usely have cannot allowed memory ..

[Hardware@node]# vzctl exec 122 cat /proc/user_beancounters
```
Version: 2.5
       uid  resource                     held              maxheld              barrier                limit              failcnt
      122:  kmemsize                  12454306             17769132             29491200             32440320
            0
            lockedpages                   0                    8                  256                  256                    0
            privvmpages                370196               451812               524288               524288
      2
            shmpages                     3547                34020               131072               131072
 0
            dummy                           0                    0                    0                    0                    0
            numproc                       127                  167                  450                  450                    0
            physspages                 118534               189254                 1024           2147483647
       0
            vmguarpages                   0                    0               524288               524288                    0
            oomguarpages                118916               191761           2147483647               524288
           0
            numtcpsock                     36                  133                 4500                 4500                    0
            numflock                       12                   60                  270                  297                    0
            numpty                          0                    3                   20                   20                    0
            numsiginfo                      0                   18                 1024                 1024                    0
```

tcpsndbuf	632472	3914920	36864000	48384000	0
tcprcvbuf	589824	6492384	36864000	48384000	0
othersockbuf	247464	1004464	1126080	12646080	0
dgramrcvbuf	0	134312	262144	262144	0
numothersock	152	422	4500	4500	0
dcachesize	2473536	3032101	8847360	9732096	0
numfile	3271	4945	11250	11250	0
dummy	0	0	0	0	0
dummy	0	0	0	0	0
dummy	0	0	0	0	0
numiptent	18	18	400	400	0

Could you help me or explain me why ?
Thanks in advance !

Subject: Re: Problem with RAM and swap
Posted by kir on Mon, 25 Oct 2010 11:18:51 GMT
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Go read wiki, http://wiki.openvz.org/UBC and so on.

Subject: Re: Problem with RAM and swap
Posted by nubio on Mon, 25 Oct 2010 11:21:50 GMT
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I already read this and i tried to put the good UBC for it
I spent 3 days to create an excel file to automatically calcul the good UBC paraemter

All run fine except the SWAP
Please could you help ? I don't want to waste your time but i really don't understand why the VPS can't swap

The swap partition is for all containers .. and in each container i see some swap but it's not accessible ..

[Hardware@node]# vzctl exec 122 free -m

	total	used	free	shared	buffers	cached

Mem:	2048	1446	601	0	0	0
-/+ buffers/cache:		1446	601			
Swap:	4194303	0	4194303			

Subject: Re: Problem with RAM and swap
Posted by nubio on Mon, 25 Oct 2010 11:27:10 GMT
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I found this :
As xemul said.. the VE has no concept of the difference between ram and swap. Its just "memory" at the VE level. So, your HN can have 64MB of ram and 64GB of swap. Or, your HN can have 64GB of ram and 64MB of swap. In the VE, the privvm, oomguar, vmguar are uneffected by this. Only the performance changes between the two scenarios. In either case, you can guarantee and limit each VE to an arbitrary amount of memory. This drastically differs from the conventional mem management of vmware/xen (isoloation). VZ is a shared kernel model and no resources are "hard dedicated" or "hard assigned".

-not possible to give/assign/guarantee a VE XX swap and YY physical memory
-not possible to restrict a VE from using physical memory and use swap instead

Think of the VZ virtual servers like resource containers, not individual linux boxes- VZ is a shared kernel approach to virtualization.

Hope this clears it up for you.

So i a VPS have 512Mo of memory it could be RAM or SWAP ? But it's not possible to give some extra swap ?

For example apache2 need swap to working fine ..
I will see the server swaping when all my memory physic will be full used ?

Regards,
Quentin

Subject: Re: Problem with RAM and swap
Posted by kir on Tue, 26 Oct 2010 08:43:25 GMT
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nubio wrote on Mon, 25 October 2010 15:27
I will see the server swaping when all my memory physic will be full used ?

Yes indeed, if there will be RAM shortage, swap will be used.

Subject: Re: Problem with RAM and swap
Posted by khorenko on Tue, 26 Oct 2010 13:35:26 GMT
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nubio wrote on Mon, 25 October 2010 15:27So i a VPS have 512Mo of memory it could be RAM or SWAP ? But it's not possible to give some extra swap ?

As it was already said by xemul when you set up a "privvmpages" limit for a Container, it means that the Container will be able to allocate that number of Virtual Memory. And you cannot say for sure how many of those pages will be in real physical memory and many of them will be in swap (on the Hardware Node!) just because it depends on the memory amount available on Hardware Node itself. If there is enough memory on the Hardware Node then all the memory allocated by Container will be in physical node RAM. If not - some pages will be swapped out.

nubio wrote on Mon, 25 October 2010 15:27For example apache2 need swap to working fine ..
I will see the server swaping when all my memory physic will be full used ?

That fake swap entry was done to be shown inside a Container especially for those silly applications which check the swap presence on start or installation stage. So the Swap at the moment is only REPORTED inside a CT, you'll never see it is reported as "used" inside a CT.
And yes - in case the whole Hardware Node lacks the physical RAM, it will use swap and memory pages (both allocated by Hardware Node itself and by Containers) may be swapped out.

Hope that helps.

--
Konstantin

Subject: Re: Problem with RAM and swap
Posted by nubio on Wed, 27 Oct 2010 19:35:28 GMT
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Thanks you very much.
Ok i will never see the swap used inside a container.

Thanks for support !