

Hard Partitioning with Oracle VM

[This note](#) describes the options that exist with [Oracle VM](#) to bind guest or virtual machine CPUs to physical CPUs or cores.

For Oracle CPU licensing purposes it is required to hardcode the cpu binding in the vm.cfg file for each guest or virtual machine.

vm.cfg examples :

cpus = '0-3'

or

cpus = '0,1'

In the first case, only CPUs (or cores in actuality) 0 1 2 3 can be used for the guest; in the second case, cores 0 and 1

If I have a guest that has 4 virtual CPUs and put cpus = '0' in the vm.cfg file, then all 4 vCPUs will be scheduled on the same physical core

If I have a guest that has 4 virtual CPUs and want them to run on 2 cores, then I could have cpus = '0,1' in my config

Examples on an 8 core system :

```
[root@ca-ostest256 ~]# xm vcpu-list 50_prod_rdbms2
Name ID VCPU CPU State Time(s) CPU Affinity
50_prod_rdbms2 26 0 4 -b- 8645.7 any cpu
50_prod_rdbms2 26 1 4 -b- 9843.6 any cpu
```

2 virtual CPUs and they can run on any of the 8 cores.

```
[root@ca-ostest256 ~]# xm vcpu-list 50_prod_rdbms2
Name ID VCPU CPU State Time(s) CPU Affinity
50_prod_rdbms2 26 0 0 -b- 8646.6 0
50_prod_rdbms2 26 1 0 -b- 9844.3 0
```

2 virtual CPUs and they can run only on physical core 0

```
[root@ca-ostest256 ~]# xm vcpu-list 50_prod_rdbms2
Name ID VCPU CPU State Time(s) CPU Affinity
50_prod_rdbms2 26 0 0 -b- 8647.8 0
50_prod_rdbms2 26 1 1 -b- 9845.0 1
```

2 virtual CPUs and they can run on 2 physical cores 0, 1

If I put cpus='0' on my guest config and I have 2 virtual CPUs then at startup of the guest :

```
Name ID VCPU CPU State Time(s) CPU Affinity
50_prod_rdbms2 45 0 0 r-- 4.3 0
50_prod_rdbms2 45 1 - --p 0.0 0
```

NOTE: *On live migration, when using xm vcpu-pin or when you modify the config file using cpus = ", the settings are lost and you need to repin the cpus on the other physical machine.*

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