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# Oracle DB

# RHEL

Oracle Database

RHEL

3가 가 .

- tuned tuned-profiles-oracle
- <https://access.redhat.com/labs/rheltfo/>
- 


## tuned profile

Oracle RDBMS

tuned-profiles-oracle

- RHEL6 : rhel-6-server-optional-rpms
- RHEL7 : rhel-7-server-optional-rpms
- RHEL8 : rhel-8-for-x86\_64-baseos-rpms

( ) .



Enterprise Linux

Red Hat

가 . , .

## /etc/sysctl.conf

- Oracle Swap 가 .

```
vm.swappiness=10
```

- dirty page 가 . 1000  
가 dirty\_background\_ratio가 3% 30 가

```
vm.dirty_background_ratio=3
```

- dirty page 가 . 1000 가 40%  
400 가 .

vm.dirty\_ratio=40

- 가 (1/100 ):

vm.dirty\_expire\_centisecs=500

- pdflush가 (1/100 ):

vm.dirty\_writeback\_centisecs=100

### HugePages

- /proc/meminfo Hugepagesize

```
$ grep Huge /proc/meminfo
HugePages_Total:      0
HugePages_Free:      0
HugePages_Rsvd:      0
Hugepagesize:      2048 kB
```

- Oracle Hugepagesize SGA (System Global Area)
HugePages . SGA
Oracle . PGA (Program Global Area) Hugepages

SGA / huge page size

20GB SGA 10240 Hugepages

Hugepagesize = 2048 KB
20 GB SGA = 20971520 KB
(20971520 / 2048) = 10240

- /etc/sysctl.conf 가 .

vm.nr\_hugepages=10240
vm.hugetlb\_shm\_group=<insert oracle group ID here>

- HugePage grub

### HugePages

```
kernel /vmlinuz-<kernel-version> ro root=/dev/vg01/lv01 hugepages=10240
<other boot options>
```

- Hugepages가 nr\_hugepages
- 
- Huge Pages Oracle Oracle

### /etc/security/limits.conf

Oracle 가 Red Hat Enterprise Linux Huge Pages  
 /etc/security/limits.conf oracle ulimit memlock  
 memlock KB Oracle Huge Pages  
 memlock (512 \* Hugepagesize) 가 512 Huge Pages  
 1048576KB (512 \* 2048)가

```
oracle soft memlock 1048576
oracle hard memlock 1048576
```

- SHMALL ceil(SHMMAX/PAGE\_SIZE)
- SHMMAX ( )
- ( )

```
mem=$(free -b | awk '/Mem/ {print $2}')
```

- ( )가 :

```
page=$(getconf PAGE_SIZE)
```

- SHMALL 75%

```
all=$(expr $mem \* 75 / 100 / $page + 1)
```

- SHMALL SHMMAX

```
max=$(expr $all \* $page)
```

- /etc/sysctl.conf SHMMAX SHMALL .

```
echo "kernel.shmmax = $max" >> /etc/sysctl.conf
echo "kernel.shmall = $all" >> /etc/sysctl.conf
```

- /etc/sysctl.conf SHMMNI .

```
echo "kernel.shmmni = 4096" >> /etc/sysctl.conf
```

- :

```
kernel.sem="250 32000 100 128"
```

- SEMMSL
- SEMMNS
- SEMOPM
- SEMMNI

```
# sysctl -w "kernel.sem = 250 32000 100 128"
# echo "kernel.sem = 250 32000 100 128" >> /etc/sysctl.conf
```

## Oracle open files

```
# vi /etc/security/limits.conf

#<domain> <type> <item> <value>
oracle hard nofile 10000
```


## Red Hat Enterprise Linux 6 7

## TPP(Transparent hugepages)

- tuned가 tuned ktune

```
# service tuned stop
# chkconfig tuned off
# service ktune stop
# chkconfig ktune off
```

# tuned-adm off



tuned-adm 가 .  
 , THP . Red Hat  
 Enterprise Linux 6 TPP (Transparent  
 hugepages) 가 .

- /boot/grub/grub.conf transparent\_hugepage=never 가

```
kernel /boot/vmlinuz-2.6.32-358.el6.x86_64 ro
root=UUID=a216d1e5-884f-4e5c-859a-6e2e2530d486 rhgb quiet
transparent_hugepage=never
```

- .

# reboot

### I / O

CFQ I/O IO .

- deadline
- noop 가

### NUMA

- NUMA
- RHEL7 numa\_balancing . Oracle  
 NUMA .
- /etc/sysctl.conf kernel.numa\_balancing = 0 sysctl -p

- <https://access.redhat.com/solutions/39188>

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