

About OOM Killer ?

Kernel 5.4.0-104-generic

OOM(Out Of Memory) ?

Linux swap , 가 가
Over Commit 가 .

OOM(Out Of Memory) Killer ?

Linux Out Of Memory가 , OOM Score
가 Kill Linux Kernel

OOM Killer /var/log/

oom_killer Log

```
$ cat /var/log/syslog | grep oom
Mar  7 19:14:00 zabbix-node01 kernel: [1132818.054201]
ib_log_writer invoked oom-killer:
gfp_mask=0x100cca(GFP_HIGHUSER_MOVABLE), order=0,
oom_score_adj=0
OOM Score OOM Killer
```

1. + fork()
- 2.
3. 가 , root (super user)
4. nice 1 Score 2 가
5. /proc/[PID]/oom_score_adj (가 가)
6. /proc/[PID]/oom_adj (가 가)

OOM Score

```
# oom_score
$ cat /proc/890081/oom_score
1048
# 890081 PID , OOM Score 1048
oom_adj / oom_score_adj
가 OOM Score 가 OOM Killer
가 , oom_adj /oom_score_adj , OOM
Score 가
oom_adj -17 ~ 15 , -17 OOM Killer Disable
가
oom_score_adj -1000 ~ 1000 , OOM Score
oom_score_adj 가 .(oom_scoer_adj -1000 oom_adj
-17 .)
oom_adj / oom_score_adj
oom_score
OOM Score oom_score_adj OOM Score
```

```
# oom_score
$ cat /proc/890081/oom_score
1048
# 890081 PID , OOM Score 1048
# oom_score_adj OOM Score
$ echo -1000 > /proc/890081/oom_score_adj
```

```
$ cat /proc/890081/oom_score_adj
-1000
# oom_score_adj 가 -1000
```

```
# oom_score / oom_adj
$ cat /proc/890081/oom_score
0
$ cat /proc/890081/oom_adj
-17
# oom_score_adj , oom_adj -17 (OOM Killer
Disable)
# oom_score 1048 -> 0
가 , overcommit . over commit
```

over commit

```
$ cat /etc/sysctl.conf | grep overcommit_memory
vm.overcommit_memory = 1 # 0~2 가 .
# 0 = Heuristic overcommit. Default , (
) over commit .
# 1 = over commit . OOM Killer가 ,
# 2 = vm.overcommit_ratio over commit
.
# 가
$ cat /etc/sysctl.conf | grep overcommit_ratio
vm.overcommit_ratio = 90
# vm.overcommit_memory가 2 가 .
# 90% + swap OOM Killer
가 .
#
$ systemctl -w
, commit 가 over commit
?
/proc/meminfo sysstat .
.
# commit
$ cat /proc/meminfo | grep Commit
CommitLimit: 30229156 kB
# vm.overcommit_memory 2 vm.overcommit_ratio
commit 가
Committed_AS: 64267776 kB
# commit
```

sysstat

commit

```
$ apt install -y sysstat
# sysstat
```

```
# sar
```

```
$ sar -r 1
```

```
Linux 5.4.0-104-generic (zabbix-node02)
_x86_64_ (16 CPU)
```

```
04/14/2022
```

```

09:25:17 AM kbmemfree kbavail kbmemused %memused kbbuffers
kbcached kbcommit %commit kbactive kbinact kbdirty
09:25:18 AM 208884 2446760 20804112 85.73 990436
1441416 64262056 196.79 19538260 3304352 1508
# %commit commit
# 100% commit , over commit
# sar (CPU, Memory, I/O)
# -r Memory , 1 1

```

Linux Memory Commit / Memory Over Commit ?
Memory Commit 가 가

A 가 가 A 가 ,
A 가 ,
Memory Commit () . ,가
? 가

1. A 가 .
2. 가 .
3. (Fragmentation)가 .
: RAM 가 가

Memory Over Commit
Memory Over() Commit
over commit 가
, over commit 가 oom killer
가 .

가

.

가