

Re: Out of Memory issue

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- *From:* Eric Sisler <esisler@xxxxxxxxxxxxxxxxxxxxxxxx>
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Andrew.Bridgeman@xxxxxxxxxxxxxxxx wrote:

I currently have a problem with our Redhat Machines running out of memory and automatically killing the main process that is running on the machine at the time. Below is my kernel version and the text from the messages file. I have checked the top command and the machine seems to have loads of the 2 gig memory left. Could someone please let me know how to resolve this issue.

This sounds like the infamous "OOM killer" problem. From an e-mail I posted around August of 2007:

Since this problem seems to popup on different lists, this message has been cross-posted to the general Red Hat discussion list, the RHEL3 (Taroon) list and the RHEL4 (Nahant) list. My apologies for not having the time to post this summary sooner.

I would still be banging my head against this problem were it not for the generous assistance of Tom Sigtler <ttsig@xxxxxxxxxxxxx> and Brian Long <brilong@xxxxxxxxxx>.

In general, the out of memory killer (oom-killer) begins killing processes, even on servers with large amounts (6Gb+) of RAM. In many cases people report plenty of "free" RAM and are perplexed as to why the oom-killer is whacking processes. Indications that this has happened appear in /var/log/messages:

Out of Memory: Killed process [PID] [process name].

In my case I was upgrading various VMware servers from RHEL3 / VMware GSX to RHEL4 / VMware Server. One of the virtual machines on a server with 16Gb of RAM kept getting whacked by the oom-killer. Needless to say, this was quite frustrating.

As it turns out, the problem was low memory exhaustion. Quoting Tom: "The kernel uses low memory to track allocations of all memory thus a system with 16GB of memory will use significantly more low memory than a system with 4GB, perhaps as much as 4 times. This extra pressure

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happens from the moment you turn the system on before you do anything at all because the kernel structures have to be sized for the potential of tracking allocations in four times as much memory."

You can check the status of low & high memory a couple of ways:

```
# egrep 'High|Low' /proc/meminfo
HighTotal: 5111780 kB
HighFree: 1172 kB
LowTotal: 795688 kB
LowFree: 16788 kB
```

```
# free -lm
total used free shared buffers cached
Mem: 5769 5751 17 0
```