Subject: Re: Avoiding memory paging with large data-set
Posted by todd on Wed, 22 May 1996 07:00:00 GMT
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In article <4nvvgn$7jc@fu-berlin.de>, marq@fub46.zedat.fu-berlin.de (Christian Marquardt) writes:
|> Hello,
|>
|> David Foster (foster@bial1.ucsd.edu) wrote:
|> : Hello all.
|>
|> : I have a question for those familiar with UNIX systems stuff. We
|> : are using SPARC 10s and 20s under Solaris 2.3, and often have to
|> : work with very large data-sets. Sometimes the operations go pretty
|>
|> [stuff deleted]
|>
|> : but the intermittency is strange. Any help in how to analyze
|> : the system's "state", including memory allocated and for which
|> : processes, would be greatly appreciated.
|>
|> apart from ps, theres the vmstat command, showing (e.g) paging activity
|> or swapping activity, every few seconds or so...
|>
|> Hope this helps.
|>
|> Chris Marquardt (marq@strat01.met.fu-berlin.de)
|>

There also exists and OpenWindows interface called proctool.
It seems to be a GUI for ps, vmstat and others of that ilk.
It even works for multi-processors. It's a pretty slick
tool. Try an Archie search for it. If you can't find it, let
me know and I'll see if I can dig up an anonymous ftp address
for you.
--

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Posted by marq on Wed, 22 May 1996 07:00:00 GMT
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Hope this helps.

Chris Marquardt (marq@strat01.met.fu-berlin.de)

Subject: Re: Avoiding memory paging with large data-set
Posted by sterner on Thu, 23 May 1996 07:00:00 GMT
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David Foster <foster@bial1.ucsd.edu> writes:

> I have a question for those familiar with UNIX systems stuff. We
> are using SPARC 10s and 20s under Solaris 2.3, and often have to
> work with very large data-sets. Sometimes the operations go pretty
> fast, and sometimes they go REALLY slow! Same machine, even the
> same data, but the time varies. I can tell that the machine is
> having to page the memory in and out continuously when things
> slow down, but I don't know why.

One thing to consider is in what order you access the data.
If you can access along the first dimension of an array it
may be quicker than along another dimension. For example,
access a large 2-d array in x instead of y if possible. I found
a case where I could speed things up significantly by doing a
transpose on a 2-d array before access the data. I could extract
rows then instead of columns and even with the added transpose
time it was faster. You will have to experiment with this.
. . .
I just tried an example for you:

```
a = lindgen(500,500)
t0=systime(1) & for i=0,499 do z=a(i,*) & print,systime(1)-t0
  ; 0.35461497  <- seconds.
```

```
t0=systime(1) & for i=0,499 do z=a(*,i) & print,systime(1)-t0
  ; 0.031723022  <- seconds.
```

That was on a loaded system (HP 7/35, two IDL jobs, plus a tar).
And I don't think the test run was paging.

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