Subject: Re: load sharing on multiple machines?
Posted by Mark Rivers on Thu, 17 Jan 2002 04:07:44 GMT
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Mike Miller <mmiller3@iupui.edu> wrote in message
news:yaghepmncy4.fsf@iupui.edu...
> Dear IDL'ers,
>
> I'm a new IDL user and I've got some image reconstruction tasks
> that are done on a slice-by-slice basis. I think that this will
> make it simple for me to run IDL programs on several different
> machines, each doing a subset of the slices, so that overall
> processing time will be reduced. I've got a stack of Linux PCs
> and some shiny new windows 2000 PCs to do this on. These windows
> machines run at 1.8 GHz and I'd like to take advantage of all the
> wasted cycles that aren't needed when the users are doing their
> email and text processing.
>
> Does anyone out there have any experience or suggestions on ways
> to implement this? I can work it out with scripts on the linux
> boxes, but I'm at a loss for how to do it with the windows
> machines. Is it even possible to work them into the mix?
> (without turning them into Linux boxes that is...)

I am doing tomography reconstruction that sounds similar to what you want to do. I am currently running on a single Windows machine, but with dual-CPUs. Both IDL and the Intel Math Kernal Library that I use for FFT-based reconstruction take advantage of both CPUs.

I have thought about what you are trying to do, use multiple machines, but have not done it yet.

Here are some possible approaches:
- One IDL process on one machine is the "master" and sends jobs to be run on other "server" machines. This could be accomplished by writing a file on the server, which IDL on that server is waiting to read. It could also be accomplished by running a server task each the server machine that listens for socket connections from the IDL master. IDL has a socket client interface.
- You could use MPI to parallelize the reconstruction. There is a group at Argonne who have this running on Windows machines for tomography reconstruction. Contact Francesco De Carlo (decarlo@aps.anl.gov) for more information. This is not using IDL, but I think IDL could be interfaced to it.

You might be interested in my Web page:
http://cars.uchicago.edu/software/tomography.html
This describes the IDL software that I've written for tomography

reconstruction, including a new GUI interface to control it.

Mark Rivers