Subject: Re: Realtime in PV-Wave
Posted by rivers on Mon, 21 Jun 1993 02:20:53 GMT
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In article <18JUN199312401085@mars.lerc.nasa.gov> uubrian@mars.lerc.nasa.gov (Brian Bentz) writes:
> Hi everyone,
>
> I'm very new to the group, so I'm not up on what's been discussed
> in the past. However, I'm working on doing some real-time work with
> PV-Wave. I'm curious who all out here on the group have done this kind
> of thing, and what they've done with it. I'm looking for some ideas,(and
> frankly, someone to ask questions because I'm still fairly new to wave
> anyway) Feel free to post, (or write, if this is such an old topic that
> nobody wants to see it anymore) Thanks!
>
> Brian
> --
> Brian Bentz, Summer Intern
> NASA Lewis Research Center
> MS 142-2
> Cleveland, OH 44135
>

We have been using IDL for real-time data collection for several years now. The applications include a soft-xray scanning microscope with real-time image display, a hard-xray trace element microprobe and a microtomography system.

All of these applications use the CALL_EXTERNAL procedure to call routines written in other languages (Fortran or C) which actually collect the data. Structures and arrays are passed to/from IDL to control the data acqusition and to pass the results back. Most of the applications use the widget toolkit to build point and click IDL interfaces. The widget "background" routine does the data display. In IDL 3.1 this is more flexible since one can define update rates for such background tasks.

For low data rate applications (<~10 points/second) the data collection loop can be written in IDL. Higher data rate applications will require that the individual data points be collected in the external compiled routines or in hardware.

The adavantage of using IDL or PV-WAVE is the ease of programming and debugging the hardware and the fact that the data being collected can be analysed/displayed without invoking another program.

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For low data rate applications (<10 points/second)
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Mark Rivers (516) 282-7708 or 5626
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Brookhaven National Laboratory rivers@bnl (Bitnet)
Upton, NY 11973 BNLX26::RIVERS (Physnet)

Subject: Re: Realtime in PV-Wave
Posted by kevin on Mon, 21 Jun 1993 16:47:57 GMT
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uubrian@mars.lerc.nasa.gov (Brian Bentz) writes:

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The best way to go would be to write all of your non-graphic programs in C or Fortran and interface them to PV wave through a client/server model. You could write a server in PV wave and run it as a seperate process (the manual explains how to do this). When your data collection routine comes to the point where it needs to display data, it can call the server which would work on displaying the data while your calling function continues on.

Kevin Anderson

Subject: Re: Realtime in PV-Wave
Posted by oet on Tue, 22 Jun 1993 07:48:43 GMT
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In article 18JUN199312401085@mars.lerc.nasa.gov, uubrian@mars.lerc.nasa.gov (Brian Bentz)

writes:
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> anyway)
> Brian

I don't know about PV-Wave but in IDL there are several ways to do things like
that. You can run IDL as RPC-Server or RPC-Client. It is possible to provide
running IDL-Severs on distributed Workstations over the whole Internet with real-time
data. Another possibility for nearly-real-time purposes is
updating a display program in IDL with periodically checking an incoming directory
for new data in a background task. This way we distribute Radar- and Satellite
images on our Wide Area Network with 10 Sun Sparc Servers and 160 Workstations.
The images are first distributed to the local area servers and the IDL frontends
on the Workstations then check the NFS mounted incoming directory. On normal
use of the network running animation loops are reorganized and updated when
a new image is in the incoming directory in less than one second.
You can get the current state of our online animation solution via ftp:

```
ftp ftp.sma.ch  (141.249.3.33)
cd /pub/idlmeteo/loop-tool
bin
get Meteo_Anima_2.0a.tar.Z
```

It is in a working state, so there is to much documentation at this time.

Thomas

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