Subject: Pvwave on Vax Hangs on Network
Posted by James Knopp on Wed, 19 Jun 1996 07:00:00 GMT
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I have a case of pvWave running on a Vax 6620 with VMS and DecWindows that hangs randomly on output. Output is to a "X" display server over a local network. Please bear with me folks -- this takes a bit of explaining.

The application collects around 200+ values for each of 512 parameters. The output is arranged into x-y plots with 32 display "pages" each having 4 linear grids of 4 parameters with titling and some annotation on each grid. Data points are plotted as symbols. Controls allow the engineer to page from one display to another in succession. The Vax will be running 4 sessions like this concurrently. There's plenty of memory and cpu load is low -- about 25% and less.

A hang can occur when changing pages. Perhaps the third grid and annotation on the page is only partially done. Each page represents about 130 KBytes over the network. The transport and protocol can be either Tcp/Ip or Decnet. For the display server I have used Macintosh with MacX/MacTcp, a 100 MHz pc with pc-TCP or pc-NFS, an HDS hardware X-Terminal, a Dec VaxStation 3100 with DecWindows, and a Sun Sparcstation 5 with Solaris. The faster platforms are more difficult to hang. A platform on a local network segment (no routers) hangs more easily than a server more remote on the network.

In each case we have a fast Vax with a slower display platform. For debugging, to achieve a degree of synchronization, and to slow things down a bit, I placed an EMPTY command after each output statement. There is a mixture of PLOT, PLOTS, OPLOT, and XYOUTS commands all using /normal coordinates. The hang will occur in the EMPTY statement -- you just never return from it. Visual Numerics reports they use all Xlib calls -- no Xm motif nor any Xt tookkit calls. In this case all poly-line and flush calls.

A network "sniffer" capturing Ethernet/Ip packet traffic will report that a packet from the Vax was never acknowledged by the server. Aha !! the problem must be at the server!! Right?? Does anyone think seven platforms, different software vendors with two different protocols and a mix of operating systems are all going to fail in the identical way? The problem is at the Vax.

Has anyone run into problems like this with separate client and server applications?

Jim Knopp