Subject: Backing store on VMS/MOTIF
Posted by landsman on Wed, 26 May 1993 06:35:00 GMT

This is a question mainly for VMS/Motif users although it might be worth
hearing from other X-windows users.

The IDL manual suggests that asking the window system to maintain backing
store (RETAIN = 1) is more efficient than asking IDL to keep a backing store
(RETAIN = 2).   It says that X windows may or may not be able to provide
a backing store depending on the capabilities of the server.

My VMS/Motif system appears able to maintain a backing store.   With RETAIN=1
it will repair a previously obscured window.   The only problem is that
TVRD does not appear to have direct access to the backing store.   Thus, the
array returned by TVRD will contain zeros if there was any obscuration of the
window.   In practice this problem occurs for me when blinking two windows
-- the first step in the blinking procedure is to read the contents of the two windows into
windows into IDL arrays.

Can anyone get TVRD to work on VMS/MOTIF with RETAIN=1?   I know that this
can be done with the X-windows system on our Sparcstations.

Wayne Landsman   landsman@stars.gsfc.nasa.gov

Subject: Re: Backing store
Posted by davidf on Thu, 11 Sep 1997 07:00:00 GMT

William Thompson is having some problems with backing store
on him Alpha Workstations. He writes:

> It seems to me that there are two possibilities. Either the problem is
> associated with the newer Alpha hardware, or with the newer version of the
> Operating System. So far, we have not upgraded our older machines to OSF 4.0,
> so maybe that's why those machines do not give any problems.
>
> I could put DEVICE, RETAIN=2 into the IDL startup script, but according to the
> online help:
>
> Pixmaps are a precious resource in the X server, so backing
> pixmaps should only be requested for windows with contents
> that must absolutely be preserved.
>
> Has anyone else noticed this behavior under Digital Unix? Is there anything to
> do to tune the system to keep this from happening?

I don't know about Alpha Workstations, but I do know that I
wouldn't put Device, RETAIN=2 into an IDL startup file if you
are planning to run any IDL object graphics programs. These
programs just do not run correctly when the RETAIN flag is set
to 2. On my machine the problem mostly manifests itself by
no object graphics axis annotation when object windows
are resized. If you don't know what the problem is, you spend
a lot of time worrying about whether you are keeping up with
the latest programming techniques. :-(

Object graphics are best done in windows with no backing
store set at all. (Object graphics contain their own means
of providing backing store or window repair, after all.)
What I have been doing is turning off backing store completely
at the system level, and using the Window, RETAIN=2 flag on direct
graphics windows when I create them. This allows me to use
direct graphics and object graphics windows in the same
application without conflicts.

Cheers,

David

--
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Subject: Re: Backing store
Posted by thompson on Fri, 12 Sep 1997 07:00:00 GMT
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It appears that the problem is indeed with the computer configuration. The
solution turned out to be the following lines in the file
/var/X11/Xserver.conf:

 ! Cateye Sever args start
  -pn -nice -2 -bs -su
 ! Cateye Server args end

Apparently, this disables backing store and save unders. When I removed the
-bs and -su switches from the command line, and rebooted, the problem went
away.

Thanks to David Fanning and Stein Vidar for the discussion about the problems
with using RETAIN=2 and object graphics.

Bill

Subject: Re: Backing store
Posted by Stein Vidar Hagfors H on Fri, 12 Sep 1997 07:00:00 GMT
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David Fanning wrote:
>
> William Thompson:
>> It seems to me that there are two possibilities. Either the problem is
>> associated with the newer Alpha hardware, or with the newer version of the
>> Operating System. So far, we have not upgraded our older machines to OSF 4.0,
>> so maybe that's why those machines do not give any problems.

Hi Bill,

(This is partially an "internal" discussion, but in the hope that
others recognize the problem, I'll let everybody else in on it)

We're running several (older) Alphas here with OSF 4.0 (or, strictly
speaking, Digital Un*x 4.0, isn't it?) without seeing that problem.
Personally I haven't tested it on a new Alpha, but you could ask
Paal if he's ever seen anything.

Im not 100% sure right now, but I think I saw that problem at Goddard
even before the new Alpha(s) arrived (I think Andrzej may have seen it,
too, and asked me for a solution). This was on the cdsa machines,
not reproducible on your machine, but then the configuration was
not identical). I seem to remember that we could reproduce it on
the cdsa machines with e.g., your account (?).

Are the "symptoms" such that the backing store *does* work when you
leave the widget alone (not moving it), but does not work when the
widget *has* been moved since the draw window was last "refreshed"?

> I don't know about Alpha Workstations, but I do know that I
> wouldn't put Device, RETAIN=2 into an IDL startup file if you
> are planning to run any IDL object graphics programs. These
> programs just do not run correctly when the RETAIN flag is set
> to 2.

And this has not been fixed in the latest version (5.0.2)?
Ugh - ugly. I mean - if this is *not* something that will be
fixed, RSI should at least turn *off* backing store automatically

---

for all object graphics windows, if it causes inexplicable results..

> What I have been doing is turning off backing store completely
> at the system level, and using the Window, RETAIN=2 flag on direct
> graphics windows when I create them. This allows me to use
> direct graphics and object graphics windows in the same
> application without conflicts.

..without conflicts except for any old routine relying on the
retain=xx being set to the correct value for that system.

For the sake of backward compatibility (with the zillions
of *existing* routines, to which people have presumably found fixes,
one of them being DEVICE,RETAIN=2 on *some* systems) I'd much rather
recommend setting RETAIN=0 explicitly in the *object* graphics
routines (if it's possible, I'm not yet into that kind of stuff).
Object graphics routines are, after all, pretty recent compared to
direct graphics routines.

Stein Vidar