
Subject: Hard crashes with device,/retain=2 ??
Posted by [condor](#) on Thu, 20 Mar 2003 18:22:53 GMT
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For some reason the default retain=1 started working for me a while ago -- I never had to care about backing store but somewhere during the upgrade from 5.3 to 5.5 or there around I lost the ability to obscure windows. This was when I got a new computer (P4-2.8 if it makes a difference, running RedHat8.0 with whatever version of XF86 is the default, so the problem might well have to do with X and not IDL).

No problem I thought and added the line "device,retain=2" to my startup file. Over the next week or two I experience hard crashes on my bot -- about once a day. I've been noodling around unixoid systems for a decade now and I've NEVER had to hit a reset button - until now. At some point I started suspecting it might have to do with the ominous warnings in the IDL help that retain=2 should only be used for really important windows and I took the line out of my startup file. Lo, I haven't had any of those crashes since.

Coincidence? Possibly -- so I figured I'd ask around if others have experienced similar strangenesses around retain=2 or if this is maybe even a well-known problem with 5.5 or something. (Yes, I have installed the patch for those color-bands ...) Or if there's just something funny with my box.

Subject: Re: Hard crashes with device,/retain=2 ??
Posted by [Nigel Wade](#) on Wed, 26 Mar 2003 11:48:13 GMT
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Big Bird wrote:

>> That sounds like a video card driver issue to me.
>>
>> What's the video card? (It's not an NVidia, using their drivers, by any
>> chance is it?).
>
> By any chance it is indeed some generic Nvidia GF4 (whatever Dell
> ships with their 8250) and it does indeed use the latest detonator
> (4191? Something like that) drivers.
>
> Your response makes me hopeful that this might be a well-known
> problem?

The NVidia Linux drivers are notoriously poor. I've had all sorts of problems with them with TwinView, hard lockups, not setting the mode

correctly for switching between X and a consoles, failing to set the right mode when exiting X and more. But, being closed source no-one but NVidia can fix them to work properly.

You do need to be sure that you have the correct NVidia drivers for the kernel you are using, it's very easy to download the wrong ones, or to upgrade your kernel and not re-create the kernel interface module for the drivers.

What happens if you use the generic xv driver supplied with XFree86? I know you won't get any hardware acceleration via OpenGL, but if you're not using it the driver might be more stable.

--

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Phone : +44 (0)116 2523548, Fax : +44 (0)116 2523555

Subject: Re: Hard crashes with device,/retain=2 ??
Posted by [Karl Schultz](#) on Wed, 26 Mar 2003 16:43:50 GMT
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"Big Bird" <condor@biosys.net> wrote in message
news:df160b8f.0303252001.2c26459a@posting.google.com...
> Nigel Wade <nmw@ion.le.ac.uk> wrote in message
news:<b5en3i\$j8l\$1@south.jnrs.ja.net>...
> {quoting myself in full for coherence -- and correcting some horrible
> typos in the process:}
>
>> Big Bird wrote:
>>
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> (4191? Something like that) drivers.
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> problem?

This almost certainly is a problem with the X server and/or its drivers. The X server runs in its own process and theoretically it should be impossible for any client program, IDL or something else, to crash the X server. But X servers have their bugs and so do the drivers. You are working with some relatively new hardware and software, so there can easily be some problems, even though the entire Linux/X picture has improved quite a bit over the past couple of years.

Also, changing IDL's RETAIN setting affects how IDL uses the X server a great deal, which in turn determines what code paths get executed in the X server as IDL runs. This may explain why you have problems with one RETAIN setting and not another. For example, the server may be having trouble copying the "backing store" pixmap to your window.

What to do? Here are a few ideas:

- Make sure you have all the possible patches/upgrades for the X server itself.
- (More important) Make sure you have the latest drivers for your video card. It looks like you have already done this. I have had some rather astounding results by just upgrading drivers. nVidia is known for their driver stability and I've often been pleasantly surprised by the results people get after they update their drivers. This may sound like an ISV cop-out, but it is true.
- Carefully read the driver release notes and documentation. See if there are any settings in the XFree86 config file that you can play with to try some experiments. For example, there may be a setting to turn off the usage of hardware accelerators on the card. This would let you test the server in

"software" mode, which may bypass some bug or problem in the vendor driver code. (For example, set the "driver" field to "vga" in the Device section.) You may not want to run in this mode all the time, but it would at least let you isolate some causes.

- Along the same lines, look for an option that would turn on server backing store. The reason why you switched from RETAIN=1 to RETAIN=2 is because your new X server no longer did its own backing store. You might be able to turn on an option to restore this behavior, letting you use RETAIN=1 again. Another way to try doing this is to provide the -wm option when you start the X server, which forces backing store on when the window is mapped. (You may have to set your runlevel to 3 and start the server with startx or xinit to try this). You should be able to turn on WhenMapped in the ServerOptions section of the XF86Config-4 config file, but I can't tell from the docs if you can do that.

Hope this helps,
Karl

Subject: Re: Hard crashes with device,/retain=2 ??
Posted by [condor](#) on Mon, 07 Apr 2003 21:38:31 GMT
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Nigel Wade <nmw@ion.le.ac.uk> wrote in message news:<b5s41t\$5pb\$1@south.jnrs.ja.net>...
>
> What happens if you use the generic xv driver supplied with XFree86? I know
> you won't get any hardware acceleration via OpenGL, but if you're not using
> it the driver might be more stable.

Thanks to all that responded, I am still troubleshooting this. Yes, I have of course recompiled all the drivers for my kernel/architecture.

For some reason, there doesn't seem to be an option to deactivate hardware acceleration for the nvidia drivers in the XF86 config file. If I change the driver from "nvidia" to "nv" things look basically OK, but I get four (4) mouse-pointers horizontally in a row (only the right one of which is active -- but that is confusing like hell). If I choose "vga" or "vesa" as drivers, X doesn't even come up. I made sure that "glx" was taken out and that "dri" and "GLcore" were in -- but there may well be another little thing I forgot to change.

I wouldn't mind handing some command-line switches to X upon startup ("-bs" seems to be what I'm looking for) but I'm not sure where/when startx is actually executed when I boot directly into runlevel 5 (or switch into it via "init 5") or how to convince xdm (or in my case kdm) to pass on switches if they should be the ones that execute startx internally somehow.

Well, I keep on messing with it -- at least I have now learned such useful things as how to switch on the hardware cursor shadow or the "digital vibrance control" -- my desktop is prettier than ever before...

Subject: Re: Hard crashes with device,/retain=2 ??
Posted by [dmarino](#) on Tue, 08 Apr 2003 14:00:19 GMT
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We recently rolled out some RedHat8.0 systems to run IDL5.6/ENVI3.6 on Dells running new Nvidia for dual-head. We had so many problems getting the displays to work right, we threw out the nvidia cards and got MatroxG550 cards.

Problem solved!

It turned out the Nvidia cards had some kind of 30 bpp mode running that wasn't a valid color class for IDL. Maybe some games and scanners can use 30 bpp? I never saw a 10/10/10 bit display before.

One other thing we tried that seemed to help, there's some settings in your XF86Config file that deal with off-screen memory pixmaps. Turn them on and off and see what happens. I think having that enabled and using retain=2 may cause a conflict.

Hope that helps,

D Marino

Subject: Re: Hard crashes with device,/retain=2 ??
Posted by [condor](#) on Fri, 25 Apr 2003 17:39:10 GMT
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This is posted mostly for reference for those poor souls who run into the same problem in the future and google for it and wonder what actually helped.

dmarino@digitalglobe.com (dmarino) wrote in message news:<1c23e5f8.0304080600.51f5f77f@posting.google.com>...
> It turned out the Nvidia cards had some kind of 30 bpp mode
> running that wasn't a valid color class for IDL. Maybe some
> games and scanners can use 30 bpp? I never saw a 10/10/10 bit
> display before.

I think this part is covered by appendix D in the nvidia driver

README:

Option "Dac8Bit" "boolean"

Most Quadro parts by default use a 10 bit color look up table (LUT) by default; setting this option to TRUE

forces

these graphics chips to use an 8 bit (LUT). Default: a 10 bit LUT is used, when available.

- > One other thing we tried that seemed to help, there's some settings in
- > your XF86Config file that deal with off-screen memory pixmaps. Turn
- > them on and off and see what happens. I think having that enabled and
- > using retain=2 may cause a conflict.

As it turned out, none of this made a difference. What helped finally was the following two lines in the "Screen" section of the XF86Config:

Section "Screen"

Option "backing_store"

Option "save_unders"

Yes, the "Screen"-section, not the "ServerFlags" section. No, this does not seem to be documented anywhere: I got this from a usenet post and the poster admitted that he got that from a usenet post as well. It sure isn't anywhere in 'man Xserver', 'man XF86Config', the nvidia driver documentation or the www.xfree86.org web site.

I am now running with the default "retain" and after a couple weeks of almost daily crashes, I haven't had one in almost a week, so I'm assuming this is what needed fixing.