Subject: Re: Running IDL from cron
Posted by Kenneth Mankoff on Thu, 22 Feb 2001 17:31:25 GMT
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This is a pretty ugly hack, but one i use with at and cron. create a save file of your IDL session, with the following two commands:

```
IDL> save, /var, file='variables.sav' IDL> save, /all, file='procedures.sav'
```

Then, i have my at job restore those two save files. I usually have my at jobs run a third file that is full of .com commands to compile any other procedures i'm interested in using...

wait for some other people to respond to this post, i'm sure there is a better way...:)

-k.

On Thu, 22 Feb 2001, Gwyn Fireman wrote:

```
> Hi, everyone -
> With Deja gone and Google barely functional I have to ask here what I'm
> sure has been addressed before:
> How do you run IDL routines from cron - while maintaining IDL_PATH and
> other environment variables?
> I have had no trouble running my idl routines using batch or at, when
> starting in the same directory as the main-level routine. In that case
> my environment is copied to the spawned process.
```

> Now I have the need to run these from cron. I have been able to write > scripts to cd to the appropriate directory and to run my .cshrc (where

- > my IDL_PATH and other environment variables are defined), but keep
- > running into problems. The latest is than .cshrc bombs on a
- > system-level env that apparently isn't defined when running from cron.
- > So can anyone point me in the right direction?
- > I'm running { alpha OSF unix 5.3 Nov 11 1999}.
- > Many thanks in advance,
- > Gwyn Fireman

>

Subject: Re: Running IDL from cron
Posted by Craig Markwardt on Thu, 22 Feb 2001 18:44:23 GMT
View Forum Message <> Reply to Message

Gwyn Fireman < Gwyn. Fireman@gsfc.nasa.gov> writes:

> Hi, everyone -

>

- > With Deja gone and Google barely functional I have to ask here what I'm
- > sure has been addressed before:

Heh, I tried this in my newsgroup archive and nothing found. Hmm.

The main problems I've found with running cron jobs are:

- 1. environment variables not set, and
- 2. programs won't run because path is not set right (consequence of #1)

The answer to number 2 is to specify all program paths explicitly. As for number 1, I would say that you should to write your shell script to set those variables explicitly as well, and bypass your .cshrc. Something like this:

#!/bin/sh HOME=/home/fireman \$HOME/bin/setup_dirs

IDL_PATH=+\$HOME/lib/idl:+/usr/local/rsi/idl/lib EXPERIMENT_DIR=/data/fireman /usr/local/bin/idl \$HOME/scripts/run_job.pro

This way everything is explicit and there isn't a chance for cron to monkey with it.

Good luck, Craig

Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response

Subject: Re: Running IDL from cron Posted by thompson on Thu, 22 Feb 2001 19:48:41 GMT View Forum Message <> Reply to Message

Gwyn Fireman <Gwyn.Fireman@gsfc.nasa.gov> writes:

- > Hi, everyone -
- > With Deja gone and Google barely functional I have to ask here what I'm
- > sure has been addressed before:
- > How do you run IDL routines from cron while maintaining IDL_PATH and
- > other environment variables?
- > I have had no trouble running my idl routines using batch or at, when
- > starting in the same directory as the main-level routine. In that case
- > my environment is copied to the spawned process.
- > Now I have the need to run these from cron. I have been able to write
- > scripts to cd to the appropriate directory and to run my .cshrc (where
- > my IDL_PATH and other environment variables are defined), but keep
- > running into problems. The latest is than .cshrc bombs on a
- > system-level env that apparently isn't defined when running from cron.
- > So can anyone point me in the right direction?
- > I'm running { alpha OSF unix 5.3 Nov 11 1999}.
- > Many thanks in advance,
- > Gwyn Fireman

Gwyn:

I suspect that your trouble is that you have environment variables which are being defined in your .login file rather than in .cshrc. That's pretty common practice, but one which I personally avoid. If you include the statement "source ~/.login", that should get around the problem.

Bill Thompson

Subject: Re: Running IDL from cron

Posted by Liam E. Gumley on Thu, 22 Feb 2001 19:57:22 GMT

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Gwyn Fireman wrote:

- > How do you run IDL routines from cron while maintaining IDL PATH and
- > other environment variables?
- > I have had no trouble running my idl routines using batch or at, when
- > starting in the same directory as the main-level routine. In that case
- > my environment is copied to the spawned process.
- > Now I have the need to run these from cron. I have been able to write

- > scripts to cd to the appropriate directory and to run my .cshrc (where
- > my IDL_PATH and other environment variables are defined), but keep
- > running into problems. The latest is than .cshrc bombs on a
- > system-level env that apparently isn't defined when running from cron.

Craig has given you a good start in a previous post. The other item which often causes problems when running IDL via cron is that you can't use graphics windows (unless you are prepared to leave a login session running all the time).

The solution is to use the Z-buffer, which allows you to emulate the functionality of an 8-bit graphics window. Let's say you want to call this procedure (myplot.pro):

```
PRO MYPLOT, X
plot, x
END
You'll need an IDL script which sets up the Z-buffer, calls the
procedure, and saves the resulting image (script.pro):
;- Set up Z buffer for 8-bit graphics
set plot, 'Z'
device, z_buffering=0, set_resolution=[640, 480], $
 set colors=256, set character size=[10, 12]
;- Run my plotting procedure
myplot, findgen(10)
:- Save the result to a GIF file
tvlct, r, g, b, /get
write_gif, 'myplot.gif', tvrd(), r, g, b
:- Exit IDL
exit
;---
Finally, you need a shell script to configure and run IDL (script.csh):
#---
#!/bin/csh
cd $HOME/myplot
source /usr/local/rsi/idl/bin/idl_setup
setenv IDL PATH ${IDL PATH}:+\${IDL DIR}/user contrib/jhu apl
```

setenv IDL STARTUP

idl script.pro >& script.out #---

Make sure the shell script has execute permission, and you're done. Test the script to make sure it works:

% ./script.csh

and you should get the following output in script.out:

IDL Version 5.3 (IRIX mipseb). (c) 1999, Research Systems, Inc.

Installation number: 13221.

Licensed for use by: Space Science & Engineering Cntr, Univ of WI

% Compiled module: MYPLOT. % Compiled module: WRITE_GIF.

% Loaded DLM: GIF.

Cheers, Liam.

http://cimss.ssec.wisc.edu/~gumley/

Subject: Re: Running IDL from cron Posted by R.Bauer on Fri, 23 Feb 2001 07:34:02 GMT

View Forum Message <> Reply to Message

"Liam E. Gumley" wrote:

Dear Liam,

write_png instead of write_gif ...

cheers

Reimar

>

- > Gwyn Fireman wrote:
- >> How do you run IDL routines from cron while maintaining IDL_PATH and
- >> other environment variables?
- >>
- >> I have had no trouble running my idl routines using batch or at, when
- >> starting in the same directory as the main-level routine. In that case
- >> my environment is copied to the spawned process.

>>

- >> Now I have the need to run these from cron. I have been able to write
- >> scripts to cd to the appropriate directory and to run my .cshrc (where

```
>> my IDL_PATH and other environment variables are defined), but keep
>> running into problems. The latest is than .cshrc bombs on a
>> system-level env that apparently isn't defined when running from cron.
>
> Craig has given you a good start in a previous post. The other item
> which often causes problems when running IDL via cron is that you can't
> use graphics windows (unless you are prepared to leave a login session
> running all the time).
> The solution is to use the Z-buffer, which allows you to emulate the
> functionality of an 8-bit graphics window. Let's say you want to call
> this procedure (myplot.pro):
>
> :---
> PRO MYPLOT, X
> plot, x
> END
> ;---
> You'll need an IDL script which sets up the Z-buffer, calls the
  procedure, and saves the resulting image (script.pro):
>
> :---
> ;- Set up Z buffer for 8-bit graphics
> set_plot, 'Z'
> device, z_buffering=0, set_resolution=[640, 480], $
   set_colors=256, set_character_size=[10, 12]
>
> :- Run my plotting procedure
> myplot, findgen(10)
> ;- Save the result to a GIF file
> tvlct, r, g, b, /get
> write_gif, 'myplot.gif', tvrd(), r, g, b
write_png, 'myplot.png', tvrd(), r, g, b
> ;- Exit IDL
> exit
> ;---
> Finally, you need a shell script to configure and run IDL (script.csh):
>
> #---
> #!/bin/csh
> cd $HOME/myplot
> source /usr/local/rsi/idl/bin/idl_setup
> setenv IDL_PATH ${IDL_PATH}:+\${IDL_DIR}/user_contrib/jhu_apl
> setenv IDL STARTUP
```

```
> idl script.pro >& script.out
> #---
> Make sure the shell script has execute permission, and you're done. Test
 the script to make sure it works:
> % ./script.csh
> and you should get the following output in script.out:
>
> IDL Version 5.3 (IRIX mipseb). (c) 1999, Research Systems, Inc.
> Installation number: 13221.
> Licensed for use by: Space Science & Engineering Cntr, Univ of WI
>
> % Compiled module: MYPLOT.
> % Compiled module: WRITE_GIF.
> % Loaded DLM: GIF.
> Cheers,
> Liam.
> http://cimss.ssec.wisc.edu/~gumley/
Reimar Bauer
Institut fuer Stratosphaerische Chemie (ICG-1)
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de
http://www.fz-juelich.de/icg/icg1/
a IDL library at ForschungsZentrum J�lich
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.h tml
http://www.fz-juelich.de/zb/text/publikation/juel3786.html
```

Subject: Re: Running IDL from cron Posted by Martin Schultz on Fri, 23 Feb 2001 12:21:18 GMT View Forum Message <> Reply to Message

I just want to stress this point:

```
"Liam E. Gumley" wrote:
>
>
;- Exit IDL
> exit
> ;---
```

>

You might be able to get away with a "dead" IDL session in an interactive shell, but with cron you should try to avoid it.

Cheers,

Martin

Subject: Re: Running IDL from cron
Posted by Vapuser on Fri, 23 Feb 2001 21:06:59 GMT
View Forum Message <> Reply to Message

Gwyn Fireman < Gwyn.Fireman@gsfc.nasa.gov> writes:

```
> Hi, everyone -
>
> With Deja gone and Google barely functional I have to ask here what I'm
> sure has been addressed before:
> How do you run IDL routines from cron - while maintaining IDL_PATH and
> other environment variables?
 I have had no trouble running my idl routines using batch or at, when
  starting in the same directory as the main-level routine. In that case
> my environment is copied to the spawned process.
>
> Now I have the need to run these from cron. I have been able to write
> scripts to cd to the appropriate directory and to run my .cshrc (where
> my IDL_PATH and other environment variables are defined), but keep
> running into problems. The latest is than .cshrc bombs on a
> system-level env that apparently isn't defined when running from cron.
>
> So can anyone point me in the right direction?
> I'm running { alpha OSF unix 5.3 Nov 11 1999}.
```

Many thanks in advance,

Gwyn Fireman

Cron uses a crippled environment in the Bourne shell, it defines only a limited number of environmental variables.

from the crontab manpage

The shell is invoked from your \$HOME directory with an arg0 of sh. Users who desire to have their .profile executed must explicitly do so in the crontab file. Cron supplies a default environment for every shell, defining HOME, LOGNAME, USER, SHELL(=/bin/sh), PATH(=/usr/sbin:/usr/bsd/:/usr/bin:/bin/:/etc:/usr/etc), and TZ.

You have to explicitly source whatever files you need to define the correct env. Usually, one does this by sourcing their .profile as the first part of a multi-part command, but you can source any file if you want to restrict the cronjob environment in some way. To execute two or more commands in the same shell, you put them inside parantheses separated by a semi-colon. When run the first command ensures the correct environment for the second.

Like this.

```
0 * * * * (. /path/to/rc/file; /path/to/script) > some-file 2>&1;
(Note the `.' there!)
```

If your .profile sets up your environment and you don't think you need to restrict the cron job in anyway, simply source it as the first part of each crontab entry. e.g.

```
0 * * * * (. $HOME/.profile; /path/to/script) > some-file 2>&1;
```

(`some-file' can be /dev/null if you desire. If nothing is there and there is any output to stdout/stderr, crontab mails it to you)

If you're using the csh, you can convert all the commands to their Bourne shell equivalents. I think you'll find this easier in the long run than trying to figure out how to correctly configure a Bourne shell using Csh configuration files.

This does *not* mean, by the way, that you have to convert *all* the scripts you call to any particular shell! All my cron jobs call perl scripts as the second command but they could just as easily run csh scripts. All that's being done with the first script is to configure the environment.

If you need help with the differences between Bourne and CSH configuration syntax, I'm sure there's someone around you who can help.

All of my automated processing for my web page (http://haifung.jpl.nasa.gov) is done by cronjobs with a combination of perl scripts calling IDL using temporary files constructed on the fly by the perl scripts. I just source \$HOME/.profile, which then sources other .rc files, as the first thing in each crontab entry. By the way, as my native shell, I run the tcsh, so I'm sympathetic to csh users.

The only other problem is the matter of the display, which you can get around, as Liam(?) pointed out, by using the Z buffer. No problem if you're doing gifs or grayscale jpegs. But it's an inconvenient but not insurmountable difficulty if you're doing true-color graphics. The solution is to operate on the indivudual color planes individually in the Z buffer and then assemble the image at the end and write it out. It's harder to do, but it isn't impossible. This is precisely how I make the truecolor jpegs on haifung.

In fact, were it not for a problem caused by an SGI utility, which is necessary to my processing, I wouldn't even need to be logged into the console for it to run. As it is, I have to be or the animation processing will timeout waiting for a connection to the X server when this SGI utility (dmconvert) goes to convert the 60 .gif files into a quicktime movie. The words I spoke when I found out that despite spending a week ridding my IDL code of all connections to the X server only to discover that it was the blackbox of the SGI utility that was the fatal stumbling block to my goal of complete 'X' independence are not reproducible in polite company.

whd

William Daffer: 818-354-0161: William.Daffer@jpl.nasa.gov

Subject: Re: Running IDL from cron

Posted by davidf on Fri, 23 Feb 2001 23:14:23 GMT

View Forum Message <> Reply to Message

Vapuser (vapuser@catspaw.jpl.nasa.gov) writes:

- > The words I spoke when I found out
- > that despite spending a week ridding my IDL code of all connections
- > to the X server only to discover that it was the blackbox of the SGI

- > utility that was the fatal stumbling block to my goal of complete
- > 'X' independence are not reproducible in polite company.

I don't think you will find any polite company here. Oh, maybe Ben Tupper never says any bad words. But surely he is the only one. :-)

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting

Phone: 970-221-0438 E-Mail: davidf@dfanning.com

Coyote's Guide to IDL Programming: http://www.dfanning.com/

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Running IDL from cron

Posted by thompson on Fri, 23 Feb 2001 23:53:32 GMT

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Vapuser <vapuser@catspaw.jpl.nasa.gov> writes:

- > Cron uses a crippled environment in the Bourne shell, it defines
- > only a limited number of environmental variables.

I've been able to use a fully functional C shell in my cron jobs, by the simple expedient of explicitly telling it what shell to run. This is done by putting

#!/bin/csh

as the first line of the script. For example, the extremely simple script

#!/bin/csh printenv

when run as a cron job, demonstrates that my .cshrc file is being automatically executed. On the other hand, my .login file is not. To do that, I would have to use

#!/bin/csh source .login printenv

which works, although I do get a "not a terminal" error. For myself, it's not necessary to run .login--all setup is done in .cshrc.

A valid C-shell script to run IDL would be

#!/bin/csh
idl << done
print,'Hello world'
done

I do have a cron job which uses IDL in just this fashion, which nightly creates some images for a web page. As somebody has already pointed out before me, the way to do this in a cron job is to use the Z buffer.

William Thompson

Subject: Re: Running IDL from cron
Posted by Ben Tupper on Mon, 26 Feb 2001 23:52:20 GMT
View Forum Message <> Reply to Message

My dear mother-in-law will let wind a big, 'Oh, fiddlesticks!' when pressed.

I prefer to leave the rough stuff to Pavel, where is he?

David Fanning wrote:

```
> Vapuser (vapuser@catspaw.jpl.nasa.gov) writes:
>
     The words I spoke when I found out
    that despite spending a week ridding my IDL code of all connections
>>
    to the X server only to discover that it was the blackbox of the SGI
>>
    utility that was the fatal stumbling block to my goal of complete
    'X' independence are not reproducible in polite company.
>>
> I don't think you will find any polite company here.
> Oh, maybe Ben Tupper never says any bad words. But
> surely he is the only one. :-)
>
> Cheers,
> David
> David Fanning, Ph.D.
> Fanning Software Consulting
> Phone: 970-221-0438 E-Mail: davidf@dfanning.com
> Coyote's Guide to IDL Programming: http://www.dfanning.com/
```

> Toll-Free IDL Book Orders: 1-888-461-0155

Ben Tupper 248 Lower Round Pond Road **POB 106** Bristol, ME 04539

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