
Subject: Read and Write IDL SAVE files!

Posted by [Craig Markwardt](#) on Mon, 12 Feb 2001 11:45:08 GMT

[View Forum Message](#) <> [Reply to Message](#)

I am pleased to release a library for reading writing and interrogating IDL SAVE files on my web page:

<http://cow.physics.wisc.edu/~craigm/idl/idl.html>

Interactive users will probably appreciate the ability of CMSAVEDIR to list the contents of a SAVE file without restoring it. I personally find this procedure very useful, because I often create save files and later forget what they contain. You may find the download worth it just for this feature! They will also probably like the /APPEND keyword of CMSAVE to append additional data to any SAVE file.

Programmers will probably use the library to write their own data, and to read user's existing data. The library provides higher-, middle- and lower-level routines for reading writing and querying a SAVE file. There are flexible ways to selectively save and restore variables under programmatic control. Using the CMSAVEDIR procedure it is possible to extract a wealth of information about the save file without actually reading the data.

The library supports all save file formats written by IDL version 4 and later. However there are some caveats. As we explored on this newsgroup, it will not be possible to save and restore objects, but JD Smith's solution will be greatly facilitated by the NAMED_CLASSES keyword of CMSAVEDIR. It is also not possible to read or write compressed files, or files larger than 2 gigabytes. Still I think people will find a lot of applications for the library.

I encourage you to give it a try. As usual, all the files are documented, and the web page contains some overall documentation. You can get started almost right away, and some examples are provided on the web page, listed under Questions and Answers. The first thing you can try is the CMSV_TEST procedure which will make sure you have a fully functional library. Hopefully there will be relatively few bugs to shake out! :-)

Have fun with it,
Craig

--

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

Subject: Re: Read and Write IDL SAVE files!
Posted by [R.Bauer](#) on Tue, 13 Feb 2001 17:32:47 GMT
[View Forum Message](#) <> [Reply to Message](#)

Craig Markwardt wrote:

>
> I am pleased to release a library for reading writing and
> interrogating IDL SAVE files on my web page:
>
> <http://cow.physics.wisc.edu/~craigm/idl/idl.html>
>

Dear Craig,

that's wonderful. This saves me a lot of future work, because I am
working on an idea how to write IDL SAV files by C/Fortran or LabView.

RSI won't like to give me the specifications of this format.

So I am waiting for your documentation.

best wishes

Reimar

--

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 Jülich
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.html

<http://www.fz-juelich.de/zb/text/publikation/juel3786.html>

Subject: Re: Read and Write IDL SAVE files!
Posted by [Craig Markwardt](#) on Tue, 13 Feb 2001 22:46:14 GMT
[View Forum Message](#) <> [Reply to Message](#)

Reimar Bauer <r.bauer@fz-juelich.de> writes:

> Craig Markwardt wrote:

>>
>> I am pleased to release a library for reading writing and
>> interrogating IDL SAVE files on my web page:
>>
>> <http://cow.physics.wisc.edu/~craigm/idl/idl.html>
>>
>
> Dear Craig,
>
> that's wonderful. This saves me a lot of future work, because I am
> working on an idea how to write IDL SAV files by C/Fortran or LabView.
>
> RSI won't like to give me the specifications of this format.
>
> So I am waiting for your documentation.

You mean you can't figure it out from the code? :-)

Writing it in C or FORTRAN would in some ways be easier, but in some ways more difficult. I use the benefit of being able to EXECUTE expressions in order to build up named structures for example. The dynamic typing is also a real boon. This would be harder in C or FORTRAN. However, if you are just interested in simple things -- arrays and scalars -- then the format is quite straightforward. It would be somewhat faster to execute in a compiled language.

Craig

--

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

Subject: Re: Read and Write IDL SAVE files!
Posted by [R.Bauer](#) on Wed, 14 Feb 2001 17:39:16 GMT
[View Forum Message](#) <> [Reply to Message](#)

Craig Markwardt wrote:

>
> Reimar Bauer <r.bauer@fz-juelich.de> writes:
>
>> Craig Markwardt wrote:
>>>
>>> I am pleased to release a library for reading writing and
>>> interrogating IDL SAVE files on my web page:
>>>

```

>>> http://cow.physics.wisc.edu/~craigm/idl/idl.html
>>>
>>
>> Dear Craig,
>>
>> that's wonderful. This saves me a lot of future work, because I am
>> working on an idea how to write IDL SAV files by C/Fortran or LabView.
>>
>> RSI won't like to give me the specifications of this format.
>>
>> So I am waiting for your documentation.
>
> You mean you can't figure it out from the code? :-)

```

I am sure I can. Because I have solved it already for some types but not for all as yours. On the other hand if a description already is available some non idl programmers are able to understand the format too.

```

> Writing it in C or FORTRAN would in some ways be easier, but in some
> ways more difficult. I use the benefit of being able to EXECUTE
> expressions in order to build up named structures for example. The
> dynamic typing is also a real boon. This would be harder in C or
> FORTRAN. However, if you are just interested in simple things --
> arrays and scalars -- then the format is quite straightforward. It
> would be somewhat faster to execute in a compiled language.
>
> Craig
>
> --
> -----
> Craig B. Markwardt, Ph.D.      EMAIL:  craigmnet@cow.physics.wisc.edu
> Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
> -----

```

--
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 Juelich
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.html

<http://www.fz-juelich.de/zb/text/publikation/juel3786.html>

Subject: Re: Read and Write IDL SAVE files!

Posted by [Christopher W. O'Dell](#) on Wed, 14 Feb 2001 19:48:46 GMT

[View Forum Message](#) <> [Reply to Message](#)

Craig,

Your library looks GREAT. I'm still using v5.2, however, and your CMRESTORE routine had some problems restoring a file written with SAVE (v5.2), giving the following error for each variable in the file:

%CMRESTORE: WARNING: could not create variable QFINALMAP in calling routine.
...

However, when i do

idl> CMRESTORE, filename, qfinalmap

it restorest that variable just fine. Any ideas?

Chris

Subject: Re: Read and Write IDL SAVE files!

Posted by [Craig Markwardt](#) on Wed, 14 Feb 2001 20:10:33 GMT

[View Forum Message](#) <> [Reply to Message](#)

"Christopher W. O'Dell" <odell@cmb.physics.wisc.edu> writes:

> Craig,
>
> Your library looks GREAT. I'm still using v5.2, however, and your CMRESTORE
> routine had some problems restoring
> a file written with SAVE (v5.2), giving the following error for each variable
> in the file:
>
> %CMRESTORE: WARNING: could not create variable QFINALMAP in calling routine.
> ...
>
> However, when i do
>
> idl> CMRESTORE, filename, qfinalmap
>
> it restorest that variable just fine. Any ideas?

Yes, you really have two choices:

* upgrade to IDL 5.3, or;

* define the variables before you call CMRESTORE.

Before IDL 5.3, there was no programmatic way to *create* a variable at the caller's level, but you can modify an existing one.

When you type,

```
CMRESTORE, filename, qfinalmap
```

you are passing by argument, which is something completely different. The values are returned by argument, so CMRESTORE doesn't have to try to deposit them in the caller's level. This should proceed without a hitch.

I should note that it doesn't matter *how* you define the variable, or even that you give it a defined value! As long as it exists as a named variable you should be fine.

This leads me to my recommended procedures:

- * if you are simply trying to restore all the variables, go ahead and use RESTORE.
- * if you want to restore selected variables, then use one of these:
CMRESTORE, filename, qfinalmap ; or
CMRESTORE, x0, x1, names=['filename', 'qfinalmap']
- * if you are writing a program then there are some other helpful ways to exchange data, using either pointers, or a structure.

Have fun Chris!
Craig

--

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

Subject: Re: Read and Write IDL SAVE files!
Posted by [Christopher W. O'Dell](#) on Thu, 15 Feb 2001 15:35:05 GMT
[View Forum Message](#) <> [Reply to Message](#)

thanks craig, i was just messing around with your programs, but when I would really use CMRESTORE at this point would be to selectively restore variables, so everything's fine. AND, as we have a site license here,

and there's now that cool trick to make gif's with 5.4, i'll probably upgrade...thanks much!

Chris

Craig Markwardt wrote:

```
> "Christopher W. O'Dell" <odell@cmb.physics.wisc.edu> writes:
>
>> Craig,
>>
>> Your library looks GREAT. I'm still using v5.2, however, and your CMRESTORE
>> routine had some problems restoring
>> a file written with SAVE (v5.2), giving the following error for each variable
>> in the file:
>>
>> %CMRESTORE: WARNING: could not create variable QFINALMAP in calling routine.
>> ...
>>
>> However, when i do
>>
>> idl> CMRESTORE, filename, qfinalmap
>>
>> it restorest that variable just fine. Any ideas?
>
> Yes, you really have two choices:
>
> * upgrade to IDL 5.3, or;
> * define the variables before you call CMRESTORE.
>
> Before IDL 5.3, there was no programmatic way to *create* a variable
> at the caller's level, but you can modify an existing one.
>
> When you type,
>
> CMRESTORE, filename, qfinalmap
>
> you are passing by argument, which is something completely different.
> The values are returned by argument, so CMRESTORE doesn't have to try
> to deposit them in the caller's level. This should proceed without a
> hitch.
>
> I should note that it doesn't matter *how* you define the variable, or
> even that you give it a defined value! As long as it exists as a
> named variable you should be fine.
>
> This leads me to my recommended procedures:
>
```

> * if you are simply trying to restore all the variables, go ahead and
> use RESTORE.
>
> * if you want to restore selected variables, then use one of these:
> CMRESTORE, filename, qfinalmap ; or
> CMRESTORE, x0, x1, names=['filename', 'qfinalmap']
>
> * if you are writing a program then there are some other helpful ways
> to exchange data, using either pointers, or a structure.
>
> Have fun Chris!
> Craig
>
> --
> -----
> Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
> Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
> -----

Subject: Re: Read and Write IDL SAVE files!
Posted by [Michael L. Kaiser](#) on Fri, 16 Feb 2001 13:18:01 GMT
[View Forum Message](#) <> [Reply to Message](#)

Cool trick to make gif files with 5.4??? Pray tell!

--

Michael L. Kaiser
NASA/GSFC Code695
Greenbelt, MD 20771
Ph: (301)-286-5461 FAX: (301)-286-1683
kaiser@panacea.gsfc.nasa.gov
or
Michael.L.Kaiser@gsfc.nasa.gov
