

---

Subject: Accessing an ASCII database?

Posted by [Jonathan Greenberg](#) on Thu, 19 Dec 2002 17:42:40 GMT

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

---

I'm trying to develop an IDL routine that allows multiple machines running IDL to query an ASCII database, and update it-- are there any prebuilt routines that could help me out with this? I'm running into problems using `openw`, because if two machines open the text file at the same time, strange things ensue. Anyone have experience with this or can point me to some scripts that could help me out?

--j

---

---

Subject: sec : U Re: Accessing an ASCII database?

Posted by [Andrew Cool](#) on Thu, 19 Dec 2002 23:14:58 GMT

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

---

Jonathan Greenberg wrote:

>  
> I'm trying to develop an IDL routine that allows multiple machines running  
> IDL to query an ASCII database, and update it-- are there any prebuilt  
> routines that could help me out with this? I'm running into problems using  
> `openw`, because if two machines open the text file at the same time, strange  
> things ensue. Anyone have experience with this or can point me to some  
> scripts that could help me out?  
>  
> --j

Jonathon,

Have a look at the `FSTAT` function.

The fields `OPEN`, `READ` and `WRITE` should allow you to block access by a second party until the file is released by the guy who's currently got the file open.

Andrew

Fields of the `FSTAT` Structure

The following descriptions are of fields in the structure returned by the `FSTAT` function. They are not keywords to `FSTAT`.

`UNIT`  $\frac{1}{2}$  The IDL logical unit number (LUN).

`NAME`  $\frac{1}{2}$  The name of the file.

`OPEN`  $\frac{1}{2}$  Nonzero if the file unit is open. If `OPEN` is zero,

the remaining fields in FSTAT will not contain useful information.

READ  $\tilde{\epsilon}^{1/2}$  Nonzero if the file is open for read access.

WRITE  $\tilde{\epsilon}^{1/2}$  Nonzero if the file is open for write access.

ISATTY  $\tilde{\epsilon}^{1/2}$  Nonzero if the file is actually a terminal instead of a normal file. For example, if you are using an xterm window on a UNIX system and you invoke FSTAT on logical unit 0 (standard input), ISATTY will be set to 1.

ISAGUI  $\tilde{\epsilon}^{1/2}$  Nonzero if the file is actually a Graphical User Interface (for example, a logical unit associated with the IDL Development Environment). Thus, if you are using the IDLDE and you invoke FSTAT on logical unit 0 (standard input), ISAGUI will be set to 1.

INTERACTIVE  $\tilde{\epsilon}^{1/2}$  Nonzero if either ISATTY or ISAGUI is nonzero.

XDR  $\tilde{\epsilon}^{1/2}$  Nonzero if the file was opened with the XDR keyword, and is therefore considered to contain data in the XDR format.

COMPRESS  $\tilde{\epsilon}^{1/2}$  Nonzero if the file was opened with the COMPRESS keyword, and is therefore considered to contain compressed data in the GZIP format.

-----  
Andrew D. Cool  
Electromagnetics & Propagation Group  
Intelligence, Surveillance & Reconnaissance Division  
Defence Science & Technology Organisation  
PO Box 1500, Edinburgh  
South Australia 5111

Phone : 061 8 8259 5740    Fax : 061 8 8259 6673  
Email : [andrew.cool@dsto.defence.gov.au](mailto:andrew.cool@dsto.defence.gov.au)  
-----

---

Subject: Re: Accessing an ASCII database?  
Posted by [Craig Markwardt](#) on Fri, 20 Dec 2002 01:13:10 GMT  
[View Forum Message](#) <> [Reply to Message](#)

---

Jonathan Greenberg <[greenberg@ucdavis.edu](mailto:greenberg@ucdavis.edu)> writes:

> I'm trying to develop an IDL routine that allows multiple machines running  
> IDL to query an ASCII database, and update it-- are there any prebuilt  
> routines that could help me out with this? I'm running into problems using  
> openu, because if two machines open the text file at the same time, strange

> things ensue. Anyone have experience with this or can point me to some  
> scripts that could help me out?

By any chance, is the IDL Astronomy Library database system suitable  
to you? It's extensive, but I've never used it myself.

Craig

---

---

Subject: Re: Accessing an ASCII database?

Posted by [thompson](#) on Fri, 20 Dec 2002 16:15:11 GMT

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

---

Craig Markwardt <craigmnet@cow.physics.wisc.edu> writes:

> Jonathan Greenberg <greenberg@ucdavis.edu> writes:

>> I'm trying to develop an IDL routine that allows multiple machines running  
>> IDL to query an ASCII database, and update it-- are there any prebuilt  
>> routines that could help me out with this? I'm running into problems using  
>> openu, because if two machines open the text file at the same time, strange  
>> things ensue. Anyone have experience with this or can point me to some  
>> scripts that could help me out?

> By any chance, is the IDL Astronomy Library database system suitable  
> to you? It's extensive, but I've never used it myself.

We do use it, but even there we have to be careful not to have two processes  
write to the database at the same time. The way we ended up doing it was to  
use lock files to manage the process. We would create a file called  
mydatabase.LOCK in the same directory as mydatabase before opening the database  
for writing, and then deleting the lock file when the database was closed. Any  
processes wanting to open the file for update would first check to make sure  
the lock file wasn't there.

We've never bothered to check for locked databases on read (openr), but the  
writes almost always append to the end of the files, leaving the bulk of the  
file untouched. Also, we always open the database and close it again for each  
individual database transaction, so you're always reading from the current  
database.

I've appended a simple procedure which you could probably modify for your  
purpose. There's also some alternative, more sophisticated, software which you  
may find useful at

<ftp://sohoftp.nascom.nasa.gov/solarsoft/gen/idl/system/>

The files there are apply\_lock.pro, check\_lock.pro, rm\_lock.pro.

```
PRO LOCK_DATABASE, DATABASE, LOCKFILE
;+
; Project   : SOHO - CDS
;
; Name      : LOCK_DATABASE
;
; Purpose   : Lock a CDS database for write.
;
; Category  : Class4, Operations, Database
;
; Explanation : Locks a catalog database for write access. If another process
; has the catalog locked, then wait until it is unlocked before
; locking it.
;
; An empty file called <database>.LOCK (e.g. experiment.LOCK) is
; created in the same directory as the database. This signals to
; other processes that the database is locked.
;
; Syntax     : LOCK_DATABASE, DATABASE, LOCKFILE
;
; Examples   : LOCK_DATABASE, 'experiment', LOCKFILE
; ... write to database, e.g. using DBBUILD ...
; UNLOCK_DATABASE, LOCKFILE
;
; Inputs     : DATABASE = The name of the database. The program looks for a
; file with the given name, and the extension .dbf in
; either the current directory, or the path given by
; the environment variable ZDBASE.
;
; Opt. Inputs : None.
;
; Outputs    : LOCKFILE = The complete name of the file <database>.LOCK,
; including the path.
;
; Opt. Outputs: None.
;
; Keywords   : None.
;
; Calls      : FIND_WITH_DEF, BREAK_FILE, FILE_EXIST, CDS_MESSAGE
;
; Common     : None.
;
; Restrictions: Must have write access in the directory containing the database
```

```

; files.
;
; Side effects: There is no timeout to this procedure. It will wait forever
; for the database to be unlocked. If a process dies leaving the
; lock file in place, then it must be deleted by hand.
;
; Prev. Hist. : None.
;
; History   : Version 1, 09-Apr-1996, William Thompson, GSFC
; Version 2, 12-Apr-1996, William Thompson, GSFC
; Improved status message
;
; Contact   : WTHOMPSON
;-
;
; ON_ERROR, 2
;
; Check the input parameters.
;
IF N_PARAMS() NE 2 THEN MESSAGE, $
'Syntax: LOCK_DATABASE, DATABASE, LOCKFILE'
;
; See if the lock file exists. If it does, then wait until it's unlocked.
; Every 30 seconds, print out a message.
;
WAITED = 0L
TEMPNAME = FIND_WITH_DEF(DATABASE+'.dbf','$ZDBASE')
BREAK_FILE, TEMPNAME, DISK, DIR, LOCKNAME, EXT
LOCKFILE = DISK + DIR + LOCKNAME + '.LOCK'
WHILE FILE_EXIST(LOCKFILE) DO BEGIN
  IF (WAITED MOD 10) EQ 0 THEN CDS_MESSAGE, /CONTINUE, $
    'Waiting for database ' + DATABASE + $
    ' to be unlocked ...'
  WAIT, 1
  WAITED = WAITED + 1
ENDWHILE
;
; Lock the database.
;
OPENW, UNIT, LOCKFILE, /GET_LUN
PRINTF, UNIT, "
FREE_LUN, UNIT
;
RETURN
END

```

---



---

Subject: Re: Accessing an ASCII database?  
Posted by [condor](#) on Sat, 21 Dec 2002 00:05:19 GMT  
[View Forum Message](#) <> [Reply to Message](#)

---

Jonathan Greenberg <[greenberg@ucdavis.edu](mailto:greenberg@ucdavis.edu)> wrote in message  
news:<BA274510.11DB6%[greenberg@ucdavis.edu](mailto:greenberg@ucdavis.edu)>...

> I'm trying to develop an IDL routine that allows multiple machines running  
> IDL to query an ASCII database, and update it-- are there any prebuilt  
> routines that could help me out with this? I'm running into problems using  
> openu, because if two machines open the text file at the same time, strange  
> things ensue.

Maybe this is a stupid comment, but things like SQL exist exactly to  
take care of things like this and to keep the programmer/user from  
having to worry about the underlying bit'n'byte logistics.

Is there a reason why that db HAS to be in ascii? Would it be  
sufficient if it were in (adabas/oracle/whathaveyou) format and there  
was a little routine for showing records in ascii when needed?

---

---

Subject: Re: Accessing an ASCII database?  
Posted by [Jonathan Greenberg](#) on Sat, 21 Dec 2002 03:29:09 GMT  
[View Forum Message](#) <> [Reply to Message](#)

---

I understand that, but can I put together a database using only IDL in an  
hour or less? I'm using IDL for scientific research, and I don't want to  
learn an entirely new language/program if I can create a "hack" that will  
perform more or less just as well as a more elegant solution... If there is  
an EASY way to do this in IDL, I'd love to know!

--j

On 12/20/02 4:05 PM, in article  
df160b8f.0212201605.142abb79@posting.google.com, "Big Bird"  
<[condor@biosys.net](mailto:condor@biosys.net)> wrote:

> Jonathan Greenberg <[greenberg@ucdavis.edu](mailto:greenberg@ucdavis.edu)> wrote in message  
> news:<BA274510.11DB6%[greenberg@ucdavis.edu](mailto:greenberg@ucdavis.edu)>...  
>> I'm trying to develop an IDL routine that allows multiple machines running  
>> IDL to query an ASCII database, and update it-- are there any prebuilt  
>> routines that could help me out with this? I'm running into problems using  
>> openu, because if two machines open the text file at the same time, strange  
>> things ensue.  
>  
>  
> Maybe this is a stupid comment, but things like SQL exist exactly to

- > take care of things like this and to keep the programmer/user from
  - > having to worry about the underlying bit'n'byte logistics.
  - >
  - > Is there a reason why that db HAS to be in ascii? Would it be
  - > sufficient if it were in (adabas/oracle/whathaveyou) format and there
  - > was a little routine for showing records in ascii when needed?
- 

---

Subject: Re: Accessing an ASCII database?

Posted by [Jonathan Greenberg](#) on Sat, 21 Dec 2002 03:30:33 GMT

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

---

I forgot to answer your question -- no, it does not have to be ascii -- as a matter of fact I've already changed it to a byte file...

--j

On 12/20/02 4:05 PM, in article

df160b8f.0212201605.142abb79@posting.google.com, "Big Bird"

<condor@biosys.net> wrote:

- > Jonathan Greenberg <greenberg@ucdavis.edu> wrote in message
  - > news:<BA274510.11DB6%greenberg@ucdavis.edu>...
  - >> I'm trying to develop an IDL routine that allows multiple machines running
  - >> IDL to query an ASCII database, and update it-- are there any prebuilt
  - >> routines that could help me out with this? I'm running into problems using
  - >> openu, because if two machines open the text file at the same time, strange
  - >> things ensue.
  - >
  - >
  - > Maybe this is a stupid comment, but things like SQL exist exactly to
  - > take care of things like this and to keep the programmer/user from
  - > having to worry about the underlying bit'n'byte logistics.
  - >
  - > Is there a reason why that db HAS to be in ascii? Would it be
  - > sufficient if it were in (adabas/oracle/whathaveyou) format and there
  - > was a little routine for showing records in ascii when needed?
- 

---

Subject: Re: Accessing an ASCII database?

Posted by [Pavel A. Romashkin](#) on Mon, 23 Dec 2002 19:51:19 GMT

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

---

Jonathan Greenberg wrote:

- >
- > I understand that, but can I put together a database using only IDL in an
- > hour or less?

I don't think so. Not if you want it to be a real \*database\*. If all you need is a \*journal\*, then yes. A database is a whole lot more than a searchable text file, and I would not take upon the task of writing a full blown IDL-driven database. But a searchable text file may be sufficient in your case, and that is up to you to determine. And if yes, then of course you can do it in an hour or less :-)

Cheers,  
Pavel

---