Subject: Time conversion for .nc file
Posted by atmospheric physics on Wed, 13 Nov 2013 15:26:16 GMT
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Hi,

I have date & UTC time in tow columns as [YYYYMMDD HRMISE], where YYYY - Year, MM - Month, DD - day, HR - Hours, MI - Minutes, SE - Seconds. Now, I wanted to convert to the "time" variable according to NetCDF convention. I mean to say that I wanted to convert my date & UTC time values to "time" in seconds since 1970-01-01 00:00:00 (in UTC). Can anyone help me how I can use SYSTIME function available in IDL?

Thanks in advance,
Madhavan

Subject: Re: Time conversion for .nc file
Posted by David Fanning on Wed, 13 Nov 2013 15:44:01 GMT
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Madhavan Bomidi writes:

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I wouldn't use the SYSTIME function. I would use the JULDAY function. I would read the two columns of data as a single string array. Then, I would do something like this (using a scalar string as an example, but this will work for a string array, too):

str = '20131113 083122'
year = Fix(StrMid(str,0,4))
mon = Fix(StrMid(str,4,2))
day = Fix(StrMid(str,6,2))
hour = Fix(StrMid(str,9,2))
min = Fix(StrMid(str,11,2))
sec = Fix(StrMid(str,13,2))
jultime = JulDay(mon,day,year,hour min,sec) - JulDay(1,1,1970,0,0,0)
ncdfTime = jultime * 24 * 60 * 60
print, ncdfTime

Cheers,

David
--

David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Thanks David ...

On Wednesday, November 13, 2013 4:44:01 PM UTC+1, David Fanning wrote:
> Madhavan Bomidi writes:
>
>
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> Cheers,
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Subject: Re: Time conversion for .nc file
Posted by lecacheux.alain on Wed, 13 Nov 2013 17:26:02 GMT

Le mercredi 13 novembre 2013 16:44:01 UTC+1, David Fanning a écrit :
> Madhavan Bomidi writes:
>
>
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> ncdfTime = jultime * 24 * 60 * 60
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> Sepore ma de ni thue. ("Perhaps thou speakest truth.")
```

You might also use string C format:

```
jd = 0d0
reads, '20131113 083122', jd, FORMAT='(C(CYI4,CMOI2,CDI2,1x,CHI2,CMI2,CSI2))'
jd -= Julday(1,1,1970,0,0,0)
```

jd *= 86400d0
ncdfTime = jd

Date string arrays can be handled in the same way.
alx.

Subject: Re: Time conversion for .nc file
Posted by David Fanning on Wed, 13 Nov 2013 17:32:47 GMT
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alx writes:

> You might also use string C format:
>
> jd = 0d0
> reads, '20131113 083122', jd, FORMAT='(C(CYI4,CMOI2,CDI2,1x,CHI2,CMI2,CSI2))'
> jd -= Julday(1,1,1970,0,0,0)
> jd *= 86400d0
> ncdfTime = jd
>
> Date string arrays can be handled in the same way.

Especially useful for the novice IDL programmer! ;-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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Subject: Re: Time conversion for .nc file
Posted by David Fanning on Wed, 13 Nov 2013 17:47:26 GMT
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alx writes:

> You might also use string C format:
>
> jd = 0d0

```
> reads, '20131113 083122', jd, FORMAT='(C(CYI4,CMOI2,CDI2,1x,CHI2,CMI2,CSI2))'
> jd -= Julday(1,1,1970,0,0,0)
> jd *= 86400d0
> ncdfTime = jd
>
> Date string arrays can be handled in the same way.
```

Incidentally, this is called C() Format Code or "calendar format" in the
on-line help. Took me about 15 minutes to find it. ;-)

Cheers,

David
--
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Subject: Re: Time conversion for .nc file
Posted by atmospheric physics on Tue, 19 Nov 2013 10:36:36 GMT
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Just a small syntax error ... (Comma is missing between hour and min)

jultime = JulDay(mon,day,year,hour, min,sec) - JulDay(1,1,1970,0,0,0)

How can we obtain the exact month, day, year, hour, min, sec from the ncdfTime created above? I
tried to use the CALDAT but it is giving some crazy numbers for each of them. I am asking this
because in order to plot the variables as a function of time, the jultime is more difficult to say about
which day it corresponds to. Do you have any better suggestion?

Thanks in advance

On Wednesday, November 13, 2013 4:44:01 PM UTC+1, David Fanning wrote:
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> hour = Fix(StrMid(str,9,2))
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> sec = Fix(StrMid(str,13,2))
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> jultime = JulDay(mon,day,year,hour min,sec) - JulDay(1,1,1970,0,0,0)
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> ncdfTime = jultime * 24 * 60 * 60
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> print, ncdfTime
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Subject: Re: Time conversion for .nc file
Posted by David Fanning on Tue, 19 Nov 2013 14:11:03 GMT

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Madhavan Bomidi writes:

> How can we obtain the exact month, day, year, hour, min, sec from the ncdfTime created above? I tried to use the CALDAT but it is giving some crazy numbers for each of them. I am asking this because in order to plot the variables as a function of time, the jultime is more difficult to say about which day it corresponds to. Do you have any better suggestion?

No other suggestions. CalDat works great. You just have to do the reverse of what you have done previously. Convert seconds to Julian days, add Julday(1,1,1970,0,0,0) to that result, and put that through the CalDat function. I've never known it to go wrong. :-)

Cheers,

David
--
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Subject: Re: Time conversion for .nc file
Posted by David Fanning on Tue, 19 Nov 2013 14:46:35 GMT

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Madhavan Bomidi writes:

> How can we obtain the exact month, day, year, hour, min, sec from the ncdfTime created above? I tried to use the CALDAT but it is giving some crazy numbers for each of them. I am asking this because in order to plot the variables as a function of time, the jultime is more difficult to say about which day it corresponds to. Do you have any better suggestion?

I added a note on how to do this in this article:

  http://www.idlcoyote.com/fileio_tips/cfseconds.php

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Time conversion for .nc file
Posted by lecacheux.alain on Tue, 19 Nov 2013 14:58:20 GMT
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Le mardi 19 novembre 2013 15:11:03 UTC+1, David Fanning a écrit :
> Madhavan Bomidi writes:
>
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>> How can we obtain the exact month, day, year, hour, min, sec from the ncdfTime created
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For novice IDL users as well as experienced ones, may I add that:

1) "calendar format" is quite useful because it works in same way in both directions and can be used with arrays, i.e.

IDL> reads, DATE, JD, format=FMT
IDL> DATES = string(JD, format=FMT)

where JD is array of doubles, DATES is array of date strings, and FMT is some calendar format.

2) axis plotting where time is expressed in Julian days is pretty easy to do by using XTICKUNITS keyword (this is true both in DG and NG !):

IDL> plot, jd, data, XTICKUNITS='year'   ;automatic labeling in years
IDL> plot, jd, data, XTICKUNITS=['minute','hour']   ;double labeling in hours and minutes.
etc...
The axis can be further customized by using MINOR and XTICKINTERVAL keywords.

alx.

Subject: Re: Time conversion for .nc file
Posted by David Fanning on Tue, 19 Nov 2013 15:11:31 GMT

alx writes:

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> etc...
> The axis can be further customized by using MINOR and XTICKINTERVAL keywords.

Sounds like it might be worth learning what the "calendar" format is all about. ;-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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