
Subject: Subset of a structure?

Posted by [troydporter13](#) on Mon, 20 Jan 2014 22:36:06 GMT

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Hi,

I am trying to get a subset from a structure. I have the following;

help, pm25_total, /struc

** Structure <358d280>, 11 tags, length=7160, data length=6566, refs=1:

```
STATION      STRING  'Station1'
OBSERVABLE   STRING  'Value1'
UNITS        STRING  ' microg m-3'
RATE         INT      600
REPORTS_GOOD STRUCT  -> <Anonymous> Array[144]
REPORTS_BAD  STRUCT  -> <Anonymous> Array[1]
REPORTS_GEN  STRUCT  -> <Anonymous> Array[1]
GAPS         STRUCT  -> <Anonymous> Array[1]
JS_GAPS      STRUCT  -> <Anonymous> Array[1]
P_FILL       STRUCT  -> <Anonymous> Array[1]
STATS        STRUCT  -> <Anonymous> Array[1]
```

help, pm25_total.reports_good, /struc

** Structure <3504e50>, 4 tags, length=48, data length=44, refs=2:

```
TIME_GOOD    STRING  '2012/06/01 00:00:00'
TIME_JS_GOOD  DOUBLE   3.9182400e+008
VALUE_GOOD    FLOAT    13.7600
COMMENT_GOOD  STRING   "
```

help, pm25_total.reports_good.time_js_good, /struc

<Expression> DOUBLE = Array[144, 5]

Time_JS_good is in julian seconds so if there is a zero value in my data I want to eliminate it.
I have tried;

```
good_val_pm25 = where(PM25_TOTAL.reports_GOOD.time_JS_GOOD gt 1,
good_val_pm25_count)
```

and then tried to use PM25_TOTAL.reports_GOOD.time_JS_GOOD(good_val_pm25) but it does not work. Any ideas why?

Troy

Subject: Re: Subset of a structure?

Posted by [Phillip Bitzer](#) on Mon, 20 Jan 2014 22:59:53 GMT

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Hi Troy-

You need to be careful between an array of structures and a structure of arrays. Here's what I gather from your example:

- 1) pm25_total is a scalar structure (N_ELEMENTS(pm25total) =1)
- 2) pm25_total.reports_good is an array of structures. There are 144 elements in this array. Each element is a structure and has 4 tags. Each tag is a scalar.

So, we have

A) pm25_total.reports_good is a 144 element array of structures

B) pm25_total.reports_good[0], pm25_total.reports_good[1], etc is a structure, and pm25_total.reports_good[0].time_js_good is a scalar (as is pm25_total.reports_good[1].time_js_good, etc)

C) pm25_total.reports_good.time_js_good[1] is non-sensical. time_js_good (the tag) is not an array, but a scalar. You want to index the array, which in this case is pm25_total.reports_good.

TL;DNR: PM25_TOTAL.reports_GOOD[good_val_pm25].time_JS_GOOD should work.

(Notice the use of square brackets for indexing an array.)

Subject: Re: Subset of a structure?

Posted by [Matthew Argall](#) on Mon, 20 Jan 2014 22:59:58 GMT

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> and then tried to use PM25_TOTAL.reports_GOOD.time_JS_GOOD(good_val_pm25) but it does not work. Any ideas why?

Try this,

```
IDL> help, (PM25_TOTAL.reports_GOOD).time_JS_GOOD[good_val_pm25]
```

Sometimes the order of operations between "." and "()" can be tricky.

If that does not work, what is the error that you get?

Subject: Re: Subset of a structure?

Posted by [Matthew Argall](#) on Mon, 20 Jan 2014 23:03:08 GMT

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Ahh, yes. Phil payed more attention that I did :-p Use his answer...

Subject: Re: Subset of a structure?

Posted by [troydporter13](#) on Mon, 20 Jan 2014 23:35:51 GMT

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Hi guys,

Thanks for your help, I appreciate it.

```
help, (PM25_TOTAL.reports_GOOD).time_JS_GOOD[good_val_pm25]  
<Expression>  DOUBLE  = Array[719, 144, 5]
```

This seems to have multiplied the original array by all the good data points so I have 719 versions of it. What I wanted it to do was remove the bad data point. So instead of 720 points I should have 719 to now plot. This didn't do that.

Troy

Subject: Re: Subset of a structure?

Posted by [Matthew Argall](#) on Tue, 21 Jan 2014 00:13:21 GMT

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```
> help, (PM25_TOTAL.reports_GOOD).time_JS_GOOD[good_val_pm25]  
>  
> <Expression>  DOUBLE  = Array[719, 144, 5]
```

Yeah, this was wrong. See Phil's answer if you have not already.

Subject: Re: Subset of a structure?

Posted by [troydporter13](#) on Tue, 21 Jan 2014 00:29:18 GMT

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```
help, PM25_TOTAL.reports_GOOD[good_val_pm25].time_JS_GOOD  
<Expression>  DOUBLE  = Array[719, 5]
```

This is still not correct though. It was an array that had 144 measurements (one every 10 minutes - 24 x 6) for each of the 5 days of data. Now it has 719 measurements for each of the five days, when it should really have 719 over the whole 5 days combined.

Troy

Subject: Re: Subset of a structure?

Posted by [Matthew Argall](#) on Tue, 21 Jan 2014 01:33:52 GMT

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```
> help, (PM25_TOTAL.reports_GOOD).time_JS_GOOD[good_val_pm25]
>
> <Expression>  DOUBLE  = Array[719, 144, 5]
```

You posted my wrong solution twice... Phil's answer was the following:

```
PM25_TOTAL.reports_GOOD[good_val_pm25].time_JS_GOOD
```

My solution (the one you posted) did not work because IDL truncates its indices, so basically you got the scalar value (PM25_TOTAL.reports_GOOD).time_JS_GOOD[0] 719 times for each of the good reports.

Subject: Re: Subset of a structure?

Posted by [Matthew Argall](#) on Tue, 21 Jan 2014 01:36:52 GMT

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Oh, my. I am messing this one up today :-p Forget my last message.

try

```
IDL> help, PM25_TOTAL.reports_GOOD[good_val_pm25[0]].time_JS_GOOD
```

IDL does not really like referencing a single tag in an array of structures. You may have to loop through them all

Subject: Re: Subset of a structure?

Posted by [Matthew Argall](#) on Tue, 21 Jan 2014 01:50:29 GMT

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Sorry for all the mix-ups. To make up for it, tell me if I am doing something differently from you...

```
IDL> reports_good = {time_good: '2012/06/01 00:00:00', time_js_good: 0D, value_good: 0.0,
comment_good: ''}
```

```
IDL> help, reports_good
```

```
** Structure <28533d8>, 4 tags, length=48, data length=44, refs=1:
```

```
  TIME_GOOD  STRING  '2012/06/01 00:00:00'
```

```
  TIME_JS_GOOD  DOUBLE      0.0000000
```

```
  VALUE_GOOD  FLOAT      0.00000
```

```
  COMMENT_GOOD  STRING  ''
```

```
IDL> reports_good = replicate(reports_good, 144)
```

```
IDL> pm25_total = {reports_good: reports_good}
IDL> help, pm25_total
** Structure <2937008>, 1 tags, length=6912, data length=6336, refs=1:
  REPORTS_GOOD  STRUCT  -> <Anonymous> Array[144]
IDL> index = indgen(50)
```

```
IDL> help, (pm25_total.reports_good)[index].time_good
<Expression>  STRING  = Array[50]
IDL> help, pm25_total.reports_good[index].time_good
<Expression>  STRING  = Array[50]
```
