
Subject: When you can't concatenate structures like you expect....

Posted by [Paul van Delst](#) on Fri, 21 May 1999 07:00:00 GMT

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Figure this one out.

Create a structure:

```
IDL>
t={latitude:0.0,longitude:0.0,decimal_time:0.0,c_date:'21-May-1999'}
IDL> HELP, t, /STRUCT
** Structure <10375708>, 4 tags, length=20, refs=1:
  LATITUDE      FLOAT      0.00000
  LONGITUDE     FLOAT      0.00000
  DECIMAL_TIME  FLOAT      0.00000
  C_DATE        STRING     '21-May-1999'
```

Now replicate it into some structure arrays:

```
IDL> t1=REPLICATE( t, 5 )
IDL> t2=REPLICATE( t, 10 )
IDL> HELP, t1, t2, /STRUCT
** Structure <10375708>, 4 tags, length=20, refs=3:
  LATITUDE      FLOAT      0.00000
  LONGITUDE     FLOAT      0.00000
  DECIMAL_TIME  FLOAT      0.00000
  C_DATE        STRING     '21-May-1999'
** Structure <10375708>, 4 tags, length=20, refs=3:
  LATITUDE      FLOAT      0.00000
  LONGITUDE     FLOAT      0.00000
  DECIMAL_TIME  FLOAT      0.00000
  C_DATE        STRING     '21-May-1999'
```

Concatenation is no problem:

```
IDL> HELP, [ t1, t2 ]
<Expression>  STRUCT    = -> <Anonymous> Array[15]
```

Now create a different structure with *exactly* the same fields and *exactly* the same data types and dimensions, and replicate it:

```
IDL>
s={latitude:0.0,longitude:0.0,decimal_time:0.0,c_date:'21-May-1999'}
IDL> HELP, s, /STRUCT
** Structure <1031e108>, 4 tags, length=20, refs=1:
  LATITUDE      FLOAT      0.00000
  LONGITUDE     FLOAT      0.00000
  DECIMAL_TIME  FLOAT      0.00000
```

```

C_DATE      STRING  '21-May-1999'
IDL> s1=REPLICATE( s, 10 )
IDL> HELP, s1, /STRUCT
** Structure <1031e108>, 4 tags, length=20, refs=2:
  LATITUDE    FLOAT      0.00000
  LONGITUDE    FLOAT      0.00000
  DECIMAL_TIME FLOAT      0.00000
  C_DATE      STRING  '21-May-1999'

```

Can't concatenate those two structures now:

```

IDL> HELP, [ t1, s1 ]
% Conflicting data structures: S1,concatenation.
% Execution halted at: $MAIN$
IDL>

```

Bummer. If you note the structure names, the hex strings 10375708 and 1031e108, this seems to distinguish what structures you can and cannot concatenate - is this what tells IDL about the structure *type*?

Anyway, my first workaround didn't work (as I expected, but..):

```

IDL> HELP, t1, s1
T1      STRUCT  =-> <Anonymous> Array[5]
S1      STRUCT  =-> <Anonymous> Array[10]
IDL> s2 = REPLICATE( s, 5 )
IDL> s3 = [ s1, s2 ]
IDL> HELP, s3
S3      STRUCT  =-> <Anonymous> Array[15]
IDL> s3[10:14]=t1[*]
% Conflicting data structures: <STRUCT  Array[5]>,S3.
% Execution halted at: $MAIN$

```

Using "relaxed" structure assignment:

```

IDL> STRUCT_ASSIGN, s3[10:14], t1

```

Works fine.

Still, it's a pain in the butt when the internal representation of structures dictates what you can and cannot concatenate. The discussion of relaxed structure assignment in the IDL online help explains why it is needed but the examples are for different structures where the tag names are the same, but the data types/sizes are all different. Seems to me that the "relaxed" assignment capability is great for those situations where structures are quite different, but not for the simple concatenation of structure arrays.

Anyway,

cheers,

paulv

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