
Subject: Features of the colon operator

Posted by [Matthew Argall](#) on Sun, 07 May 2017 11:10:20 GMT

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An interesting feature of the colon operator caught me by surprise. Using the two examples from the IDL help page

www.harrisgeospatial.com/docs/Creating_Arrays.html

```
IDL> Help, [[1:5], [6:10], 11, [11:16], 17, 18, 19, 20, [21:30]]
```

```
<Expression>   INT      = Array[31]
```

```
IDL> Help, [[10:19], [20:29], [30:39]]
```

```
<Expression>   INT      = Array[10, 3]
```

The first example results in an Nx1 array while the second example results in an Nx3 array despite the similarity in appearance. The latter is consistent with non-colon-operator array concatenation, the former is not. It gets more complicated when I want to combine an Nx1 with an Mx1 array to get an Lx1 array.

```
IDL> Help, [ 0:10:0.1, 0:10:0.5 ]
```

^

% Illegal array creation syntax.

```
IDL> Help, [ [0:10:0.1], [0:10:0.5] ]
```

```
% Unable to concatenate variables because the dimensions do not agree: <FLOAT   Array[21]>.
```

```
% Execution halted at: $MAIN$
```

To get the Lx1 array, I have to do one of the following

```
IDL> Help, Reform( [ [Transpose([0:10:0.1])], [Transpose([0:10:0.5])] ] )
```

```
<Expression>   FLOAT    = Array[122]
```

```
IDL> Help, [ [0:10:0.1], !Null, [0:10:0.5] ]
```

```
<Expression>   FLOAT    = Array[122]
```
