
Subject: Re: Where vs Histogram vs ??

Posted by [Pavel A. Romashkin](#) on Fri, 18 Oct 2002 20:49:53 GMT

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

Allright, so we need a solution in IDL.

At this array size the slowest portion of the process is not the WHERE function as far as I can tell. It is memory reallocation for the main array and for the temporary index arrays that IDL creates. Therefore I can suggest trying the following approach.

Allocate it all only once:

```
ind = ptrarr(n_tags(data_St))
for i = 0, n_tags(data_st) do ind[i] = ptr_new(data_st.(i))
```

This does take a little time to execute.

Now you have a static index of all fields. Of course, you have used twice the memory but given the relatively small data volume it seems ok. On my machine the RAM used by both structure and pointer index barely reaches 1010 Mb, so I have room for further calculations.

Now, you can search the pointer array elements using WHERE, and it is fairly fast. I tested it on my machine; the same WHERE statement you show took 56 s for the structure array, but only 6 s using the index pointer array. Further speed increase will be achievable if you merged timestamps into one field, as others recommended; some flexibility in querying would be, however, lost. And of course you can use the resulting INDEX to subscript your original structure array.

Hope this helps,

Pavel

```
index = Where(* ind[0] GE 596  AND $
* ind[0] LE 2000  AND $ ; yr
* ind[1] GE 15   AND $ ; day
* ind[1] LE 52   AND $
* ind[6] GE 6    AND $ ;beam
* ind[6] LE 5    AND $
* ind[2] GE 15   AND $ ;half hr
* ind[2] LE 5    AND $
* ind[4] EQ 5    AND $ ;WRF
* ind[5] EQ 5    AND $ ;Freq
(* ind[8])[0] NE -555)
```

Andrew Cool wrote:

>

> "Pavel A. Romashkin" wrote:

>>

>> I can definitely echo Bob's suggestion to use index for searching. Don't

>> use structure fields. Using a database would like ly be better yet; I
>> think MS Access Jet should be reasonably fast with 15 mln records.
>> Good luck,
>> Pavel
>
> Hi Pavel,
>
> I'm confined to running this under OpenVMS, so MS Access probably
> ain't the cure here. ;-)
>
> Andrew
>
