Identification

Obtain, modify bit-counts in segment branch
get_count, set_count
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Purpose

Get_count and set_count are library procedures which obtain or modify the bit-count information of a branch in the segment hierarchy. They allow the user to obtain or provide this information in terms of bits, characters, or (machine) words.

Usage and Implementation

```haskell
call get_count $ \begin{cases} 
  \text{bits} \\
  \text{chars} \\
  \text{words}
\end{cases} (\text{dir\_name, ent\_name, n\_items});
```

dcl (dir\_name, ent\_name) char (*) varying,
n\_items fixed bin (17);

At each entry, get_count sets a local variable to the number of bits which represent the item named by the entry, i.e. bits, characters, or words.

The number of bits per item is:

<table>
<thead>
<tr>
<th>entry_name</th>
<th>item size</th>
</tr>
</thead>
<tbody>
<tr>
<td>bits</td>
<td>.1</td>
</tr>
<tr>
<td>chars</td>
<td>9</td>
</tr>
<tr>
<td>words</td>
<td>36</td>
</tr>
</tbody>
</table>

Get_count then calls the status primitive in Directory Control with arguments of dir\_name and entry\_name and extracts the bit-count from the returned structure (see B\$.8.02). The execute or read attribute must be on for dir\_name.

Error returns from the call to status are handled as described in BY.2.01.
If the bit-count obtained is not a multiple of the item size, an error is signalled in the standard fashion (see BY.11.00 - BY.11.04). If control returns from the SIGNAL, the excess bits are ignored.

The value obtained from status is then divided by the item size, and this result is assigned to the variable n_items.

\[
\text{call set_count \{bits\}} \quad \text{(dir_name, ent_name, n_items)}; \\
\text{\{chars\}} \\
\text{\{words\}}
\]

(Same declarations as for get_count).

At each entry, set_count multiplies the item count, n_items, by the item size (as for get_count), to generate the bit count.

If the bit count is negative or is greater than \(36 \times 2^{18}\), an error is signalled; upon return the absolute value of the bit-count is used.

The Directory Control primitive setbc is called with dir_name, ent_name, and the calculated bit count. The execute attribute must be on for dir_name and the write attribute must be on for ent_name.

Error returns from setbc are handled as described in BY.2.01.