

H5F_GET_FREE_SECTIONS

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H5F_GET_FREE_SECTIONS

Retrieves free-space section information for a file

Procedure:

H5F_GET_FREE_SECTIONS(fcpl_id, type, nsects, sect_info)

Signature:

```
ssize_t H5Fget_free_sections( hid_t fcpl_id, H5F_mem_t type, size_t nsects, H5F_sect_info_t * sect_info )
```

Parameters:

<code>hid_t fcpl_id</code>	IN: The file creation property list identifier
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<p><i>H5F_mem_t</i> type</p>	<p>IN: The file memory allocation type Valid values are as follows:</p> <table border="1" data-bbox="820 210 1485 703"> <tr> <td>H5FD_MEM_DEFAULT</td> <td>The default file memory allocation type</td> </tr> <tr> <td>H5FD_MEM_SUPER</td> <td>File memory allocated for <i>Super block</i></td> </tr> <tr> <td>H5FD_MEM_BTREE</td> <td>File memory allocated for <i>B-tree</i></td> </tr> <tr> <td>H5FD_MEM_DRAW</td> <td>File memory allocated for raw data</td> </tr> <tr> <td>H5FD_MEM_GHEAP</td> <td>File memory allocated for <i>Global Heap</i></td> </tr> <tr> <td>H5FD_MEM_LHEAP</td> <td>File memory allocated for <i>Local Heap</i></td> </tr> <tr> <td>H5FD_MEM_OHDR</td> <td>File memory allocated for <i>Object Header</i></td> </tr> </table> <p>There are other file memory allocation types that are mapped to the above six basic types.</p>	H5FD_MEM_DEFAULT	The default file memory allocation type	H5FD_MEM_SUPER	File memory allocated for <i>Super block</i>	H5FD_MEM_BTREE	File memory allocated for <i>B-tree</i>	H5FD_MEM_DRAW	File memory allocated for raw data	H5FD_MEM_GHEAP	File memory allocated for <i>Global Heap</i>	H5FD_MEM_LHEAP	File memory allocated for <i>Local Heap</i>	H5FD_MEM_OHDR	File memory allocated for <i>Object Header</i>
H5FD_MEM_DEFAULT	The default file memory allocation type														
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<p><i>hsize_t</i> nsects</p>	<p>IN: The number of free-space sections.</p>														
<p><i>H5F_sect_info_t</i> *sect_info</p>	<p>IN/OUT: Pointer to instances of <i>H5F_sect_info_t</i> in which the free-space section information is to be returned</p> <p>An <i>H5F_sect_info_t</i> struct is defined as follows (in <i>H5Fpublic.h</i>):</p> <pre data-bbox="820 1008 1485 1270"> typedef struct H5F_sect_info_t { haddr_t addr; /* address of the /* free-space section */ hsize_t size; /* size of the /* free-space section */ } H5F_sect_info_t; </pre>														

Description:

H5F_GET_FREE_SECTIONS retrieves free-space section information for the free-space manager with *type* that is associated with file *fcpl_id*. If *type* is *H5FD_MEM_DEFAULT*, this routine retrieves free-space section information for all the free-space managers in the file.

This routine retrieves free-space section information for *nsects* sections or at most the maximum number of sections in the specified free-space manager. If the number of sections is not known, a preliminary H5F_GET_FREE_SECTIONS call can be made by setting *sect_info* to NULL and the total number of free-space sections for the specified free-space manager will be returned. Users can then allocate space for entries in *sect_info*, each of which is defined as an *H5F_sect_info_t* struct (see **Parameters** section).

Returns:

Returns the number of free-space sections for the specified free-space manager in the file; otherwise returns a negative value.

Failure Modes:

This routine will fail when the following is true:

- The library fails to retrieve the file creation property list associated with *fcpl_id*.
- If the parameter *sect_info* is non-null, but the parameter *nsects* is equal to 0.
- The library fails to retrieve free-space section information for the file associated with the file creation property list *fcpl_id*.

Example:

Example Usage:

The first example shows that the first call to `H5Fget_free_sections()` returns the total number of free-space sections in `nsects` for all the free-space managers in the file that is associated with `fcpl`. The second call to `H5Fget_free_sections()` retrieves free-space section information in `sect_info` for `nsects` sections. The value in `ret` is the same as `nsects`.

```
nsects = H5Fget_free_sections(fcpl, H5FD_MEM_DEFAULT, 0, NULL);
:
: Allocate space for entries in sect_info
:
ret = H5F_get_free_sections(fcpl, H5FD_MEM_DEFAULT, nsects, sect_info);
```

The second example shows that the first call to `H5Fget_free_sections()` returns the total number of free-space sections in `nsects` for the `H5FD_MEM_SUPER` free-space manager in the file that is associated with `fcpl`. Even though there are `nsects` sections for the specified free-space manager, the second call to `H5Fget_free_sections()` retrieves free-space section information in `sect_info` for `nsects-1` sections as requested. The value in `ret` is the same as `nsects`.

```
nsects = H5Fget_free_sections(fcpl, H5FD_MEM_SUPER, 0, NULL);
:
: Allocate space for entries in sect_info
:
ret = H5F_get_free_sections(fcpl, H5FD_MEM_SUPER, nsects-1, sect_info);
```

The third example shows that the first call to `H5Fget_free_sections()` returns the total number of free-space sections in `nsects` for the `H5FD_MEM_BTREE` free-space manager in the file that is associated with `fcpl`. Even though the second call to `H5Fget_free_sections()` requests `nsects+1` sections, the routine retrieves free-space section information in `sect_info` for only `nsects` sections. The value in `ret` is the same as `nsects`.

```
nsects = H5Fget_free_sections(fcpl, H5FD_MEM_BTREE, 0, NULL);
:
: Allocate space for entries in sect_info
:
ret = H5F_get_free_sections(fcpl, H5FD_MEM_BTREE, nsects+1, sect_info);
```

History:

Release	Change
1.10.0	C function introduced in this release.