

OL Search: The On Location™ API 1.1

This release contains files that implement the search engine technology of the On Technology, Inc. product On Location™. The technology in the On Location™ Developer's Kit cannot be incorporated into a shipping version of your product until your company and ON Technology have agreed upon mutually acceptable technical and financial terms.

Description:

The On Location Developer's Kit is a tool for programmers that allows access to the search engine technology of On Location. The kit consists of a library (plus code resource), C and Pascal header files, example XCMD source, pre-built XCMDs and an example stack. This will allow queries on existing On Location indexes from within other applications (including DAs, MPW tools and HyperCard stacks). The kit retains the speed of the On Location product.

Files:

The files included in this release of the On Location API are as follows:

ol_search.h	- MPW 3.2 C header file
ol_search.p	- MPW 3.2 Pascal header file
ol_search_glue.o	- MPW 3.2 library file
ol_search_code	- Resource file containing the ol_search engine

Examples files:

ol_search_XFCN.c	- MPW 3.2 C source file for example XFCN's
OLSearch_XFCN	- Pre-built HyperCard 2.0 XFCN's
OLSearch	- Example HyperCard 2.0 stack

API Overview:

Two data types and the related enumerated values are used:

```
enum {
    no_err = 0,
    no_code_resource,
    bad_index,
    damaged_index,
    bad_query_type,
    bad_query_string,
    bad_result_handle,
    result_overflow,    /* non-fatal */
};
typedef short ol_error;

enum {
    filename_matches_exactly = 0,
    filename_starts_with,
    filename_ends_with,
    filename_contains,
    text_matches_exactly,
    text_matches_root_of,
};
typedef short ol_query;
```

Three functions are used to access the search engine:

ol_init:

```
Handle ol_init();                /* C declaration */
FUNCTION ol_init: HANDLE; C;    { Pascal declaration }
```

`ol_init` returns a relocatable, non-purgeable handle to the persistent state of the engine. This data is on the order of the size of the “OL File Kinds” file (about 15K). Call this function once upon entry to your code to initialize the On Location search engine. The engine will still perform the query if `ol_init` is not called provided a zero is passed as the `ol_state` parameter. If no state is provided then only “generic” file kinds data will be available in the result data (i.e. “document”, “folder”, or “application”).

Note:

If you are running the On Location INIT on the host machine and background indexing is enabled `ol_init` will turn off background indexing. This is necessary to prevent conflicts.

ol_search:

```
ol_error ol_search( Handle ol_state,
                   const Str255 index,
                   const Str255 query,
                   ol_query type,
                   Handle result,
                   long *num_hits );
```

```
FUNCTION ol_search( ol_state: HANDLE;
                   index: Str255;
                   query: Str255;
                   type: ol_query;
                   result: HANDLE;
                   VAR num_hits: LONGINT): ol_error; C;
```

Parameters:

`ol_state`: the handle returned from `ol_init` (or zero, see above).

`index`: full path to the index file.

`query`: query string. NOTE: this is actually restricted to 100 characters.

`type`: one of the values from the `ol_query` enum.

`result`: a handle of text (not more than 30,000 bytes)

`num_hits`: actual number of hits of the query (not the number returned in the result).

Result data:

The format of the result data is described by the constants:

```
#define FIELD_DELIMITER '\t'
#define LINE_DELIMITER '\n'
#define END_OF_HANDLE '\0'
```

If the result data grows beyond 30,000 bytes it will be truncated. (This is a limitation of HyperCard fields). Only complete lines will be written. In the case of truncation, `result_overflow` will be returned from `ol_search`. `num_hits` will contain the actual number of hits not the number of lines in the handle. The result handle will be resized to the actual size of the data (including the `END_OF_HANDLE` character).

Note:

The size of the result handle (less one for the `END_OF_HANDLE` character) should be used to determine the amount of data to parse. The `END_OF_HANDLE` character is added for compatibility with HyperCard which requires a null terminated string to be displayed in a field.

Be advised that null characters (currently the `END_OF_HANDLE` character too) can appear elsewhere in the result handle as well because `TYPEs`, `CREATORs`, and `FILENAMEs` can include them. This may result in the truncation of the results field prematurely when displayed in HyperCard (like in the `OLSearch` example stack).

If the number of hits (`num_hits`) is zero the only character in the handle will be the `END_OF_HANDLE` delimiter.

Return values:

If `ol_search` encounters an error with the parameters, one of the following values of `ol_error` may be returned:

`no_err`: No problems encountered.

`no_code_resource`: The `ol_search` code resource is not available. Check your build procedure

(described below).

`bad_index`: The file passed in as the index to be queried was not a valid On Location index.

`damaged_index`: The index provided is damaged. You will need to delete that index and reindex the target volume.

bad_query_type: Value given for `query` was not in the range provided by `ol_query`.

bad_query_string: More than 100 characters were placed in the query buffer.

bad_result_handle: Invalid result handle.

result_overflow: The query results overflowed the 30,000 character limit. The handle is still valid and contains only complete lines.

If an unexpected error is encountered then the value returned from `ol_search` will be a Macintosh OS error.

ol_term:

```
void ol_term(Handle ol_state);  
PROCEDURE ol_term(ol_state: HANDLE); C;
```

Call `ol_term` when your application terminates or when you are finished using the On Location search engine. `ol_state` disposes of the state data initialized by `ol_init`.

NOTE: The handle is disposed by `ol_term` and any further use of it will be an error.

Build instructions:

The file `ol_search_glue.o` contains stub routines that will load the resource found in the file `ol_search_code`. In order to build an executable using this package, link with the file `ol_search_glue.o` (or import it into the Think environment) and use “rez” (or `resedit` or Think’s built in resource inclusion mechanism) to include the resource from `ol_search_code` (`TYPE=ONLC`, `ID=0`) into the executable. We have had success using the engine from Apple’s Allegro Common Lisp environment, call us if you would like more information.

HyperCard Users:

In order to use the search engine from HyperCard you must first copy the XFCN’s from the file `:Examples:ol_search_XFCN` into the stack that you wish to use it from. Please see the example stack `OLSearch` for details on how

Page 6

to access the XFCN's. If further information is needed please call or post messages to our bulletin boards.

General Information and limitations:

In this release simultaneous queries on the same index by the search engine and the On Location product are not supported.

If background indexing is enabled on the host machine it will be disabled when `on_init` is called and re-enabled with a call to `on_term`.

Remember that the search engine needs memory to run (so grow the memory partition of the host accordingly).

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