



# PHP and OpenIsis databases

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# History of the PHP extension

- Problem: creation of a library module for PostNuke
- CGI has a high overhead
- PHP easier to maintain than WWWISIS
- OpenIisis the better solution: C-library

# Achievements

- API for reading ISIS databases using PHP
- PHP extension for Unix and win32
- PECL including of the extension

# API of the extension

- Functions:
  - resource `isis_open([string $dbname, [string $args]])`
    - Returns a dbid to manipulate an isis database
  - boolean `isis_close(resource $dbid)`
    - Return true or false on attempt to close an isis db
  - resource `isis_search(string $term, resource $dbid)`
    - Return search for a term over an isis database
  - resource `isis_query(string $querystring, resource $dbid)`
    - Return a set of records or empty on running a query like "water \* plant" over isis

# API of the extension

- Functions (continued):
  - array `isis_terms(string $term, resource $dbid)`
    - Return terms matching term (e.G. `plant$`) over an isis database
  - array `isis_fetch_array(resource $isis_result)`
    - Return an array with result information (mfn and tags)
  - array `isis_fetch_flat_array(resource $isis_result)`
    - Return an array with result information (mfn and tags)
  - int `isis_num_rows(resource $isis_result)`
    - Return the number of rows of a result

# API of the extension

- Functions (continued):
  - boolean `isis_data_seek(resource $isis_result, int $row_number)`
    - Move internal result pointer
  - boolean `isis_mfn_data_seek(resource $isis_result, int $mfn_number)`
    - Move internal result pointer to mfn
  - boolean `isis_free_result(resource $isis_result)`
    - Return TRUE or FALSE

# API of the extension

- INI entries: (php.ini)
  - `isis.default_dir = string`
  - `isis.default_database = string` (this is also the reason why `isis_open` can have no parameters)

# Opening and closing the databases

- You can open an ISIS database using the function `isis_open()`. V.G.:
  - `$dbname = "/var/db/isis/cds/cds"`  
`$args = "-encoding Cp850"`
  
  - `$dbid = isis_open($dbname, $args);`
- After this you can use `$dbid` on the other functions.
- If `isis_open()` don't receive parameters it will try to use defaults from the INI file.

# Opening and closing the databases

- `isis_close()` only must be called after you don't need the database; i.e., when you will not search or use search results.
- If you don't call `isis_close()` PHP will call it, as there are registered destructors for all the resources.
- `isis_close()` receives as parameter the `$dbid` returned by `isis_open()`.

# Searching through the databases

- There are three functions for searching:
  - `isis_search()`
  - `isis_query()`
  - `isis_terms()`
- The first two return a result type and the later returns an array of terms.

# Searching through the databases

- `isis_search` and `isis_query`:
  - `isis_search` can only look for a term while `isis_query` can do more complex search (queries) like "PHP/(24) \* Braulio/(14)"
- `isis_terms` can help on giving hints to the users about terms in the index; V.G.: you can show the terms beginning with an a using `isis_terms("a$")`

# Searching through the databases

- Example:

- `$dbname = "/var/db/isis/cds/cds";`  
`$args = "-encoding Cp850";`

```
$dbid = isis_open($dbname, $args);
```

```
if (trim($_POST['search']) == "$")
```

```
{
```

```
    $result = isis_search($_POST['search'],$dbid);
```

```
}
```

```
else
```

```
{
```

```
    $result = isis_query($_POST['search'],$dbid);
```

```
}
```

# Looping through results

- You can loop through results using these functions:
  - `isis_fetch_array`
  - `isis_fetch_flat_array`
  - `isis_data_seek`
  - `isis_mfn_data_seek`
  - `isis_num_rows`

# Looping through results

- `isis_fetch_array()` and `isis_fetch_flat_array()`
  - Those functions return an array (a record) from a result, advancing the internal pointer to the next array (record).
  - The array returned by the former depends on the structure of your database and can be very complex, and the later is a simple array of arrays containing a tag and a value.
  - If the internal pointer is at the end of the results `isis_fetch_array` and `isis_fetch_flat_array()` return `FALSE`. This can be used as a condition.

# Looping through results

- Example of `isis_fetch_array()`:
  - `$dbid = isis_open("/var/db/isis/cds/cds");`  
`$result = isis_search("$",$dbid);`  
  
`while ($record = isis_fetch_array($result))`
  - `{`
  - `echo "<pre>" . var_dump($record) . "<pre><br />";`
  - `}`  
`isis_close($dbid);`

# Looping through results

- Example of `isis_fetch_flat_array()`:

- `$dbid = isis_open("/var/db/isis/cds/cds");`

- `$result = isis_search("$", $dbid);`

- ```
while ($record = isis_fetch_flat_array($result) ) {
    print (" <tr><td colspan=\"2\">MFN: $record[mfn]</td></tr>\n");
    for ($i=0; $i<count($record)-1; ++$i) { //-1 because mfn is +1
        list ($tag, $value) = $record[$i];
        print (" <tr>\n".
            " <td>$tag</td>\n".
            " <td>".htmlspecialchars($value)."</td>\n".
            " </tr>\n");
    }
}
```

# Looping through results

- You could also loop through results `isis_data_seek()` and `isis_num_rows()`.
- `isis_data_seek` lets you move the internal pointer in the result.
- `isis_num_rows` gives you the actual number of records returned into the result by your search.

# Looping through results

- `isis_data_seek()` and `isis_num_rows()`:
  - `$dbid = isis_open("/var/db/isis/cds/cds");`  
`$result = isis_search("$",$dbid);`  
  
`for ($i=0; $i<isis_num_rows($result); ++$i)`
  - `{`
  - `isis_data_seek($result, $i);`
  - `$record = isis_fetch_flat_array($result);`
  - `echo "<pre>" . var_dump($record) . "<pre><br />";`
  - `}`

# Looping through results

- `isis_mfn_data_seek()` is useful to move the internal pointer of the result to a specific MFN.
- This function was added because a petition on the [php@openisis.org](mailto:php@openisis.org) list.

# Looping through results

- `isis_mfn_data_seek()` example:

```
- function mfnrange($db, $from, $count)
{
    $dbid = isis_open($db);
    $result = isis_search("$", $dbid);
    if (!isis_data_seek($result, $from))
        return FALSE;

    $i = 0;
    while ($record = isis_fetch_array($result))
    {
        echo "<pre>" . var_dump($record) . "<pre><br />";
        $i++;
        if ($i > $count)
            break;
    }
}
```

# Resources

- <http://www.OpenIsis.org>
- <http://sourceforge.net/projects/isis>
- <http://wiki.openisis.org/i/view/Php/WebHome>
- Please join this list: [php@openisis.org](mailto:php@openisis.org), just send a blank email to [php-subscribe@openisis.org](mailto:php-subscribe@openisis.org).