

**NAME**

**nsdispatch** - name-service switch dispatcher routine

**LIBRARY**

Standard C Library (libc, -lc)

**SYNOPSIS**

```
#include <sys/types.h>
```

```
#include <stdarg.h>
```

```
#include <nsswitch.h>
```

*int*

```
nsdispatch(void *retval, const ns_dtab dtab[], const char *database, const char *method_name,  
            const ns_src defaults[], ...);
```

**DESCRIPTION**

The **nsdispatch**() function invokes the methods specified in *dtab* in the order given by `nsswitch.conf(5)` for the database *database* until a successful entry is found.

*retval* is passed to each method to modify as necessary, to pass back results to the caller of **nsdispatch**().

Each method has the function signature described by the typedef:

```
typedef int (*nss_method)(void *retval, void *mdata, va_list *ap);
```

*dtab* is an array of *ns\_dtab* structures, which have the following format:

```
typedef struct _ns_dtab {  
    const char      *src;  
    nss_method      method;  
    void            *mdata;  
} ns_dtab;
```

The *dtab* array should consist of one entry for each source type that is implemented, with *src* as the name of the source, *method* as a function which handles that source, and *mdata* as a handle on arbitrary data to be passed to the method. The last entry in *dtab* should contain NULL values for *src*, *method*, and *mdata*.

Additionally, methods may be implemented in NSS modules, in which case they are selected using the *database* and *method\_name* arguments along with the configured source. Modules must use source names different from the built-in ones.

*defaults* contains a list of default sources to try if *nsswitch.conf(5)* is missing or corrupted, or if there is no relevant entry for *database*. It is an array of *ns\_src* structures, which have the following format:

```
typedef struct _ns_src {
    const char      *src;
    uint32_t  flags;
} ns_src;
```

The *defaults* array should consist of one entry for each source to be configured by default indicated by *src*, and *flags* set to the criterion desired (usually *NS\_SUCCESS*; refer to *Method return values* for more information). The last entry in *defaults* should have *src* set to *NULL* and *flags* set to 0.

For convenience, a global variable defined as:

```
extern const ns_src __nsdefaultsrc[];
```

exists which contains a single default entry for the source ‘files’ that may be used by callers which do not require complicated default rules.

‘...’ are optional extra arguments, which are passed to the appropriate method as a variable argument list of the type *va\_list*.

### Valid source types

While there is support for arbitrary sources, the following *#defines* for commonly implemented sources are available:

| <b>#define</b>      | value    |
|---------------------|----------|
| <i>NSSRC_FILES</i>  | "files"  |
| <i>NSSRC_DB</i>     | "db"     |
| <i>NSSRC_DNS</i>    | "dns"    |
| <i>NSSRC_NIS</i>    | "nis"    |
| <i>NSSRC_COMPAT</i> | "compat" |

Refer to *nsswitch.conf(5)* for a complete description of what each source type is.

### Method return values

The *nss\_method* functions must return one of the following values depending upon status of the lookup:

**Return value**    Status code  
*NS\_SUCCESS*

success  
NS\_NOTFOUND  
                  notfound  
NS\_UNAVAIL  
                  unavail  
NS\_TRYAGAIN  
                  tryagain  
NS\_RETURN -none-

Refer to `nsswitch.conf(5)` for a complete description of each status code.

The `nsdispatch()` function returns the value of the method that caused the dispatcher to terminate, or `NS_NOTFOUND` otherwise.

## NOTES

FreeBSD's Standard C Library (`libc`, `-lc`) provides stubs for compatibility with NSS modules written for the GNU C Library `nsswitch` interface. However, these stubs only support the use of the "passwd" and "group" databases.

## SEE ALSO

`hesiod(3)`, `stdarg(3)`, `nsswitch.conf(5)`, `yp(8)`

## HISTORY

The `nsdispatch()` function first appeared in FreeBSD 5.0. It was imported from the NetBSD Project, where it appeared first in NetBSD 1.4. Support for NSS modules first appeared in FreeBSD 5.1.

## AUTHORS

Luke Mewburn <[lukem@netbsd.org](mailto:lukem@netbsd.org)> wrote this freely-distributable name-service switch implementation, using ideas from the ULTRIX `svc.conf(5)` and Solaris `nsswitch.conf(4)` manual pages. The FreeBSD Project added the support for threads and NSS modules, and normalized the uses of `nsdispatch()` within the standard C library.