

# **neon HTTP/WebDAV client library**

**by Joe Orton**

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# Chapter 1. Introduction to neon

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This is neon, an HTTP and WebDAV client library

## How to use neon from your application

The neon source package is designed to be easily incorporated into applications:

- autoconf macros are distributed in the 'macros' subdirectory of the neon distribution. Use NEON\_LIBRARY from your configure.in to check for the presence of the neon library installed on the system. The macro adds an '--with-neon=...' argument to configure, which allows the user to specify a location for the library (the standard /usr and /usr/local directories are checked automatically without having to be specified).
- The 'src' directory of the neon package can be imported directly into your application, if you do not wish to add an external dependency. If you wish to bundle, use the NEON\_BUNDLED macro to configure neon in your application: here, the neon sources are bundled in a directory called 'libneon':

```
NEON_BUNDLED(libneon, ...)
```

If your application supports builds where srcdir != builddir, you should use the NEON\_VPATH\_BUNDLED macro like this:

```
NEON_VPATH_BUNDLED(${srcdir}/libneon, libneon, ...)
```

If you use this macro, a '--with-included-neon' option will be added to the generated configure script. This allows the user to force the bundled neon to be used in the application, rather than any neon library found on the system. If you allow neon to be configured this way, you must also configure an XML parser. Use the NEON\_XML\_PARSER macro to do this.

- The final argument to the \_BUNDLED macros is a set of actions which are executed if the bundled build \*is\* chosen (rather than an external neon which might have been found on the user's system). In here, use either the NEON\_LIBTOOL\_BUILD or NEON\_NORMAL\_BUILD macro to set up the neon Makefile appropriately: including adding the neon source directory to the recursive make.

A full fragment might be:

```
NEON_BUNDLED(libneon, [  
  NEON_NORMAL_BUILD  
  NEON_XML_PARSER  
  SUBDIRS="libneon $SUBDIRS"  
])
```

This means the bundled neon source directory (called 'libneon') is used if no neon is found on the system, and the standard XML parser search is used.

## neon API guidelines

neon reserves the namespace `ne_*`: an application which uses neon may not use symbols within this namespace.

## Protocol compliance

neon is intended to be compliant with all relevant IETF and W3C standards.

### RFC2518

neon is deliberately not compliant with section 23.4.2, and treats property names as a (namespace-URI, name) pair. This is generally considered [<http://lists.w3.org/Archives/Public/w3c-dist-auth/1999OctDec/0343.html>] to be the correct behaviour by the WebDAV WG and is likely to change in a future revision of the spec.

### RFC2616

The redirect interface is deliberately not compliant with section 10.3, and will automatically follow redirects for the `PROPFIND` and `OPTIONS` methods as well as `GET` and `HEAD`. It has been stated [<http://www.apache.org/licenses/LICENSE-2.0>] that this was the intent of the specification by one of the authors.

## Chapter 2. The neon API for the C language

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### Sessions

An HTTP session is created using the `ne_session_create` function

### Low-level request interface

`ne_request.h` interface

### Basic HTTP and WebDAV methods

`ne_basic.h`

### HTTP authentication

Authentication is supported using callbacks: using the `ne_set_server_auth` function, a callback can be registered which will supply authentication credentials upon demand. In an interactive application, this will typically be done using some form of username/password prompt.

Two types of authentication are supported: server authentication (via the `ne_set_server_auth` function), and proxy authentication (via the `ne_set_proxy_auth` function).

### Parsing XML

`ne_xml.h` functions

### WebDAV properties

`ne_props.h` functions

### WebDAV locking

ne\_locks.h functions

## Utility functions

stuff

## String handling

ne\_string.h functions

## Date/time manipulation

ne\_dates.h functions

# neon API reference

```
<refentryinfo>
<title>neon</title>
</refentryinfo>
```

## Name

ne\_session\_create -- Manipulate HTTP sessions

ne\_session\_create, ne\_close\_connection, ne\_session\_server, ne\_session\_destroy

## Synopsis

```
#include <ne_session.h>
```

```
ne_session *ne_session_create();
int ne_session_server(session, hostname, port);
ne_session *session;
const char *hostname;
int port;
int ne_close_connection(session);
ne_session *session;
void ne_session_destroy(session);
ne_session *session;
```

## Description

An `ne_session *` object is used to group a sequence of HTTP requests made to a server, enabling the use of a persistent connection to be used across all the requests, shared authentication credentials, and more.

The `ne_session_server` call sets the server to be used for the session. This function must be called before any requests are made using the session.

## Return Values

On success, `ne_session_server` returns 0 (`NE_OK`), or a non-zero value if an error occurred.

## Errors

`NE_LOOKUP`: the hostname cannot be resolved.

## Examples

Create and initialize a session:

```
ne_session *sess = ne_session_create();
if (ne_session_server(sess, "my.host.name", 80) == NE_LOOKUP) {
    printf("Host not found!");
} else {
    /* ... use sess ... */
}
ne_session_destroy(sess);
```

## Name

ne\_session\_proxy -- Proxy server settings  
ne\_session\_proxy, ne\_session\_decide\_proxy

## Synopsis

```
int ne_session_proxy(session, hostname, port);
ne_session *session;
const char *hostname;
int port;
void ne_set_error(session, error);
ne_session *session;
const char *error;
const char *ne_get_error(session);
ne_session *session;
const char *ne_get_scheme(session);
ne_session *session;
const char *ne_get_server_hostport(session);
ne_session *session;
void ne_set_useragent(session, product);
ne_session *session;
const char *product;
void ne_set_expect100(session, use_expect100);
ne_session *session;
int use_expect100;
void ne_set_persist(session, use_persist);
ne_session *session;
int use_persist;
typedef int (*ne_use_proxy)(userdata, scheme, hostname);
void *userdata;
const char *scheme;
const char *hostname;
void ne_session_decide_proxy(session, use_proxy, userdata);
ne_session *session;
ne_use_proxy use_proxy;
void *userdata;
```

## Description

An `ne_session *` object is a foo.

```
<refentryinfo>
<title>neon</title>
</refentryinfo>
```

## Name

neon-config -- provide information about installed copy of neon library  
neon-config

## Synopsis

```
neon-config [--prefix] [--cflags | --libs | --support feature | --help | --version]
```

## Description

The **neon-config** script provides information about an installed copy of the neon library. The `--cflags` and `--libs` options instruct how to compile and link an application against the library; the `--version` and `--support` options can help determine whether the library meets the applications requirements.

## Options

```
--cflags      Print the flags which should be passed to the C compiler when compiling object
              files, when the object files use neon header files.

--libs        Print the flags which should be passed to the linker when linking an application
              which uses the neon library

--version     Print the version of the library

--prefix dir  If dir is given; relocate output of --cflags and --libs as if neon was
              installed in given prefix directory. Otherwise, print the installation prefix of the
              library.

--support feature  The script exits with success if feature is supported by the library.

--help        Print help message; includes list of known features and whether they are supported
              or not.
```

## Example

Below is a Makefile fragment which could be used to build an application against an installed neon library, when the **neon-config** script can be found in `$PATH`.

```
CFLAGS = `neon-config --cflags`
LIBS = `neon-config --libs`
OBJECTS = myapp.o
TARGET = myapp

$(TARGET): $(OBJECTS)
$(CC) $(LDFLAGS) -o $(TARGET) $(OBJECTS) $(LIBS)

myapp.o: myapp.c
$(CC) $(CFLAGS) -c myapp.c -o myapp.o
```

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