

**NAME**

htonl, htons, ntohl, ntohs - convert values between host and network byte order

**SYNOPSIS**

```
#include <arpa/inet.h>

uint32_t htonl(uint32_t hostlong);

uint16_t htons(uint16_t hostshort);

uint32_t ntohl(uint32_t netlong);

uint16_t ntohs(uint16_t netshort);
```

**DESCRIPTION**

The **htonl()** function converts the unsigned integer *hostlong* from host byte order to network byte order.

The **htons()** function converts the unsigned short integer *hostshort* from host byte order to network byte order.

The **ntohl()** function converts the unsigned integer *netlong* from network byte order to host byte order.

The **ntohs()** function converts the unsigned short integer *netshort* from network byte order to host byte order.

On the i386 the host byte order is Least Significant Byte first, whereas the network byte order, as used on the Internet, is Most Significant Byte first.

**ATTRIBUTES****Multithreading (see pthreads(7))**

The **htonl()**, **htons()**, **ntohl()**, and **ntohs()** functions are thread-safe.

**CONFORMING TO**

POSIX.1-2001.

Some systems require the inclusion of `<netinet/in.h>` instead of `<arpa/inet.h>`.

**SEE ALSO**

[endian\(3\)](#), [gethostbyname\(3\)](#), [getservent\(3\)](#)

**COLOPHON**

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