eCos Reference Manual

gethostbyname

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GETHOSTBYNAME(3)        System Library Functions Manual       GETHOSTBYNAME(3)

NAME
     gethostbyname, gethostbyname2, gethostbyaddr, gethostent, sethostent,
     endhostent, hstrerror, herror - get network host entry

SYNOPSIS
     #include <netdb.h>
     extern int h_errno;

     struct hostent *
     gethostbyname(const char *name);

     struct hostent *
     gethostbyname2(const char *name, int af);

     struct hostent *
     gethostbyaddr(const char *addr, int len, int af);

     struct hostent *
     gethostent(void);

     void
     sethostent(int stayopen);

     void
     endhostent(void);

     void
     herror(const char *string);

     const char *
     hstrerror(int err);

DESCRIPTION
     The gethostbyname() and gethostbyaddr() functions each return a pointer
     to an object with the following structure describing an internet host
     referenced by name or by address, respectively.  This structure contains
     either information obtained from the name server (i.e., resolver(3) and
     named(8)), broken-out fields from a line in /etc/hosts, or database
     entries supplied by the yp(8) system.  resolv.conf(5) describes how the
     particular database is chosen.

     struct  hostent {
             char    *h_name;        /* official name of host */
             char    **h_aliases;    /* alias list */
             int     h_addrtype;     /* host address type */
             int     h_length;       /* length of address */
             char    **h_addr_list;  /* list of addresses from name server */
     };
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#define h_addr  h_addr_list[0]  /* address, for backward compatibility */
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The members of this structure are:

h_name   Official name of the host.

h_aliases   A zero-terminated array of alternate names for the host.

h_addrtype   The type of address being returned.

h_length   The length, in bytes, of the address.

h_addr_list A zero-terminated array of network addresses for the host.
             Host addresses are returned in network byte order.

h_addr   The first address in h_addr_list; this is for backward com-
             patibility.

The function gethostbyname() will search for the named host in the cur-
rent domain and its parents using the search lookup semantics detailed in
resolv.conf(5) and hostname(7).

gethostbyname2() is an advanced form of gethostbyname() which allows
lookups in address families other than AF_INET, for example AF_INET6.

The gethostbyaddr() function will search for the specified address of
length len in the address family af. The only address family currently
supported is AF_INET.

The sethostent() function may be used to request the use of a connected
TCP socket for queries. If the stayopen flag is non-zero, this sets the
option to send all queries to the name server using TCP and to retain the
connection after each call to gethostbyname() or gethostbyaddr(). Other-
wise, queries are performed using UDP datagrams.

The endhostent() function closes the TCP connection.

The herror() function prints an error message describing the failure. If
its argument string is non-null, it is prepended to the message string
and separated from it by a colon (`:') and a space. The error message is
printed with a trailing newline. The contents of the error message is
the same as that returned by hstrerror() with argument h_errno.

FILES
     /etc/hosts
     /etc/resolv.conf

DIAGNOSTICS
     Error return status from gethostbyname(), gethostbyname2(), and
     gethostbyaddr() is indicated by return of a null pointer. The external
     integer h_errno may then be checked to see whether this is a temporary
     failure or an invalid or unknown host.

     The variable h_errno can have the following values:

     HOST_NOT_FOUND No such host is known.

     TRY_AGAIN   This is usually a temporary error and means that the
                     local server did not receive a response from an authori-
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                         tative server.  A retry at some later time may succeed.

        NO_RECOVERY       Some unexpected server failure was encountered.  This is
                          a non-recoverable error.

        NO_DATA           The requested name is valid but does not have an IP
                          address; this is not a temporary error.  This means that
                          the name is known to the name server but there is no
                          address associated with this name.  Another type of
                          request to the name server using this domain name will
                          result in an answer; for example, a mail-forwarder may be
                          registered for this domain.

SEE ALSO
     resolver(3), getaddrinfo(3), getnameinfo(3), hosts(5), resolv.conf(5),
     hostname(7), named(8)

CAVEAT
     If the search routines in resolv.conf(5) decide to read the /etc/hosts
     file, gethostent() and other functions will read the next line of the
     file, re-opening the file if necessary.

     The sethostent() function opens and/or rewinds the file /etc/hosts.  If
     the stayopen argument is non-zero, the file will not be closed after each
     call to gethostbyname(), gethostbyname2(), or gethostbyaddr().

     The endhostent() function closes the file.

HISTORY
     The herror() function appeared in 4.3BSD.  The endhostent(),
     gethostbyaddr(), gethostbyname(), gethostent(), and sethostent() func-
     tions appeared in 4.2BSD.

BUGS
     These functions use static data storage; if the data is needed for future
     use, it should be copied before any subsequent calls overwrite it.  Only
     the Internet address formats are currently understood.

     YP does not support any address families other than AF_INET and uses the
     traditional database format.

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