NAME
udp - Internet User Datagram Protocol

SYNOPSIS
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>

int
socket(*AF_INET*, *SOCK_DGRAM*, *0*);

DESCRIPTION
UDP is a simple, unreliable datagram protocol which is used to support the SOCK_DGRAM abstraction for the Internet protocol family. UDP sockets are connectionless, and are normally used with the sendto(2) and recvfrom(2) calls, though the connect(2) call may also be used to fix the destination for future packets (in which case the recv(2) or read(2) and send(2) or write(2) system calls may be used).

UDP address formats are identical to those used by TCP. In particular UDP provides a port identifier in addition to the normal Internet address format. Note that the UDP port space is separate from the TCP port space (i.e., a UDP port may not be "connected" to a TCP port). In addition broadcast packets may be sent (assuming the underlying network supports this) by using a reserved "broadcast address"; this address is network interface dependent.

Options at the IP transport level may be used with UDP; see ip(4). UDP_ENCAP socket option may be used at the IPPROTO_UDP level to encapsulate ESP packets in UDP. Only one value is supported for this option: UDP_ENCAP_ESPINUDP from RFC 3948, defined in *<netinet/udp.h>*.

MIB (sysctl) Variables
The **udp** protocol implements a number of variables in the *net.inet.udp* branch of the sysctl(3) MIB, which can be also read or modified with sysctl(8):

blackhole   When a datagram is received on a port where there is no socket listening, do not return an ICMP port unreachable message. (Disabled by default. See blackhole(4).)

checksum   Enable UDP checksums (enabled by default).

log_in_vain For all UDP datagrams, to ports on which there is no socket listening, log the connection attempt (disabled by default).

maxdgram   Maximum outgoing UDP datagram size

recvspace   Maximum space for incoming UDP datagrams

ERRORS

A socket operation may fail with one of the following errors returned:

[EISCONN]   when trying to establish a connection on a socket which already has one, or when trying to send a datagram with the destination address specified and the socket is already connected;

[ENOTCONN]   when trying to send a datagram, but no destination address is specified, and the socket has not been connected;

[ENOBUFS]   when the system runs out of memory for an internal data structure;

[EADDRINUSE]   when an attempt is made to create a socket with a port which has already been allocated;

[EADDRNOTAVAIL]
                      when an attempt is made to create a socket with a network address for which no network interface exists.

SEE ALSO

getsockopt(2), recv(2), send(2), socket(2), blackhole(4), inet(4), intro(4), ip(4), udplite(4)

HISTORY

The **udp** protocol appeared in 4.2BSD.