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/*
** c_srvudp_echo.c -- Servidor de echo UDP usando connect()
*/

#include <stdio.h>
#include <signal.h>
#include <stdlib.h>
#include <unistd.h>
#include <errno.h>
#include <string.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>

#define MYPORT 4950      // the port users will be connecting to

#define MAXBUFLLEN 1000

void alarme();

int sockfd, numbytes, inlines = 0, inchars = 0;
struct sockaddr_in their_addr; // connector's address information
socklen_t addr_len;

void alarme() {
    /* Passou um segundo sem receber nada, sendo que ja tinha recebido algo antes.
       Vamos imprimir as estatisticas até agora e resetar a contagem. */

    fprintf(stderr, "Linhas recebidas: %d\nCaracteres recebidos: %d\n", inlines, inchars);
    inlines = 0; inchars = 0;
    fflush(stdout);

    // UDP (Dis)Connect
    their_addr.sin_family = AF_UNSPEC;
    connect( sockfd, (struct sockaddr *)&their_addr, addr_len );
}

void quit() {
    // UDP (Dis)Connect
    their_addr.sin_family = AF_UNSPEC;
    connect( sockfd, (struct sockaddr *)&their_addr, addr_len );

    close(sockfd);
    fprintf(stderr, "\rSinal capturado, saindo.\n");
    exit(0);
}

int main(void) {
    struct sockaddr_in my_addr; // my address information

    char buf[MAXBUFLLEN];      /* Buffer para receber msgs */

    if ((sockfd = socket(AF_INET, SOCK_DGRAM, 0)) == -1)
    {
        perror("socket");
        exit(1);
    }

    my_addr.sin_family = AF_INET;           // host byte order
    my_addr.sin_port = htons(MYPORT);       // short, network byte order
    my_addr.sin_addr.s_addr = INADDR_ANY;   // automatically fill with my IP
    memset(&(my_addr.sin_zero), '\0', 8);   // zero the rest of the struct

    if (bind(sockfd, (struct sockaddr *)&my_addr,
              sizeof(struct sockaddr)) == -1)
    {
        perror("bind");
        exit(1);
    }
}
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    }

    addr_len = (socklen_t)sizeof(struct sockaddr);

    signal(SIGINT, quit);
    signal(SIGALRM, alarm);      /* Associando o sinal ao handler. */

    while(1)
    {
        /* Loop principal */

        //Get first message/IP from client
        if( recvfrom(sockfd, buf, MAXBUFLEN-1 , 0, (struct sockaddr *)&their_addr, &addr_len)!= -1
    )
        {
            printf("%s", buf);
            // UDP Connect
            if( ( connect( sockfd, (struct sockaddr *)&their_addr, addr_len ) ) == -1 )
            {
                perror("connect");
                exit(1);
            }
        }
        else
        {
            perror("recvfrom");
            exit(1);
        }

        alarm(1);
        if ((numbytes = send(sockfd, buf, strlen(buf), 0)) == -1)
        {
            perror("send");
            exit(1);
        }

        /* printf("Connected\n"); */

        inlines = 1; inchars = numbytes;
        while((numbytes = recv(sockfd, buf, MAXBUFLEN-1 , 0)) > 0)
        {
            if (numbytes == -1)
            {
                perror("recvfrom");
                exit(1);
            }
            inchars += numbytes;
            inlines++;
            buf[numbytes] = '\0';
            printf("%s", buf);
            if ((numbytes = send(sockfd, buf, strlen(buf), 0)) == -1)
            {
                perror("send");
                exit(1);
            }
            alarm(1);
            /* Se nao receber datagrama com 0 bytes em até um segundo
            ele desperta, e chama a funcao alarme() */
        }

        fprintf(stderr, "Linhas recebidas: %d\nCaracteres recebidos: %d\n", inlines, inchars);
        alarm(0);
        fflush(stdout);
        /* Terminou com um cliente, desliga o alarme. */
        /* Forçar a saída */
    }

    return 0;
}
```