socat Bidirectional byte relay

Address 1 TYPE:args,options → both ways → **socat** relay loop → both ways → **Address 2** TYPE:args,options

CONCEPTS

socat <addr1> <addr2> opens two endpoints and copies bytes both ways between them. Everything else is choosing the two addresses.

An address is TYPE:arg:arg,option,option=value. Options follow the commas; the type name is case-insensitive.

The first address that fails or hits EOF ends the relay. Add fork on a listener to keep serving, and shut down or -t if the peer needs EOF.

BASICS

`socat <addr1> <addr2>`
Relay between two addresses

`socat - <addr>`
Connect stdin/stdout to an address

`socat -u <addr1> <addr2>`
One way only: first read, second write

`socat -d -d <addr1> <addr2>`
Log more: -d notices, -d -d info

BASICS (cont.)

`socat -v <addr1> <addr2>`
Dump transferred text to stderr

`socat -x <addr1> <addr2>`
Dump transferred data as hex to stderr

`socat -T <secs> <addr1> <addr2>`
Quit after this much inactivity

`socat -V`
Print version and built-in features

TCP AND UDP

`socat - TCP:<host>:<port>`
Connect to a TCP port

`socat TCP-LISTEN:<port> -`
Listen for one TCP connection

`socat TCP-LISTEN:<port>,fork,reuseaddr -`
Serve each client in a child process

`socat TCP-LISTEN:<port>,bind=<ip> -`
Listen on one local address only

TCP AND UDP (cont.)

`socat TCP-LISTEN:<port>,range=<cidr> -`
Accept only peers in a network

`socat - TCP4:<host>:<port>`
Force IPv4 (TCP6 forces IPv6)

`socat TCP:<host>:<port>,connect-timeout=<s> -`
Give up connecting after a while

`socat - UDP:<host>:<port>`
Send and receive UDP datagrams

`socat UDP-LISTEN:<port>,fork -`
Receive UDP datagrams, one peer per child

UNIX SOCKETS AND FILES

`socat UNIX-LISTEN:<path>,fork -`
Listen on a Unix socket

`socat - UNIX-CONNECT:<path>`
Connect to a Unix socket

UNIX SOCKETS AND FILES (cont.)

`socat UNIX-LISTEN:<path>,mode=<mode> -`
Set permissions of the socket file

`socat - GOPEN:<file>`
Open a file or socket, whichever it is

FORWARD AND PROXY

`socat TCP-LISTEN:<lport>,fork,reuseaddr TCP:<host>:<port>`
Forward a local port to a remote one

`socat TCP-LISTEN:<lport>,fork,bind=<ip> TCP:<host>:<port>`
Forward, listening on one address only

`socat TCP-LISTEN:<port>,fork UNIX-CONNECT:<path>`
Expose a Unix socket over TCP

`socat -v TCP-LISTEN:<lport>,fork TCP:<host>:<port>`
Forward and print the traffic

TLS

`socat - OPENSSL:<host>:<port>`
Connect over TLS (verifies the server)

`socat - OPENSSL:<host>:<port>,verify=0`
Connect over TLS, skip verification

`socat OPENSSL-LISTEN:<p>,cert=<f>,verify=0 -`
TLS server, no client cert needed

PROGRAMS AND TERMINALS

`socat TCP-LISTEN:<port>,fork EXEC:<prog>`
Run a program per connection

`socat -,raw,echo=0 <addr>`
Raw local terminal, no echo

RECIPES

Send a file between hosts

```
# receiver
socat -u TCP-LISTEN:5000
CREATE:in.tar
# sender
socat -u OPEN:in.tar
TCP:<host>:5000
```