Expect

Curing Those Uncontrollable Fits of Interaction

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"I'm from the government and I'm here to hack"

UNIX programs *were*

Traditionally noninteractive

- good for pipe building
- good for shell scripts

Rarely interactive–only

- bad for pipe building
- bad for shell scripts

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Classic example of a program that doesn't fit: passwd

- ignores redirection
- does not take (the right) parameters

Is this really desirable?

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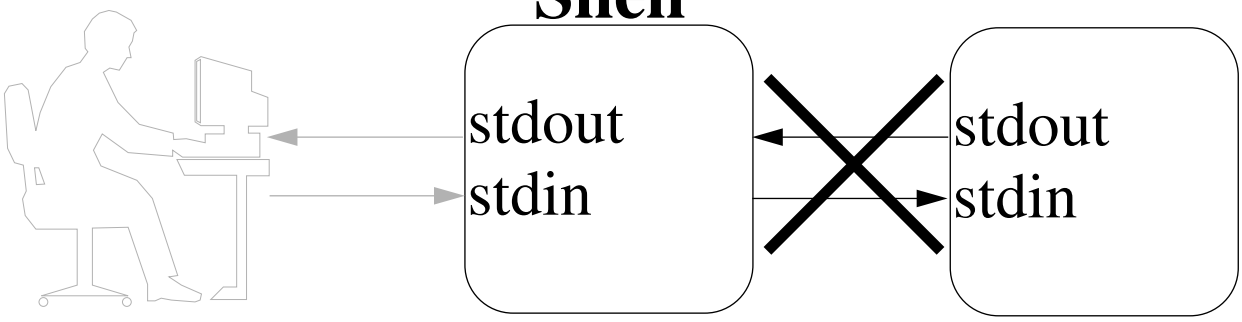
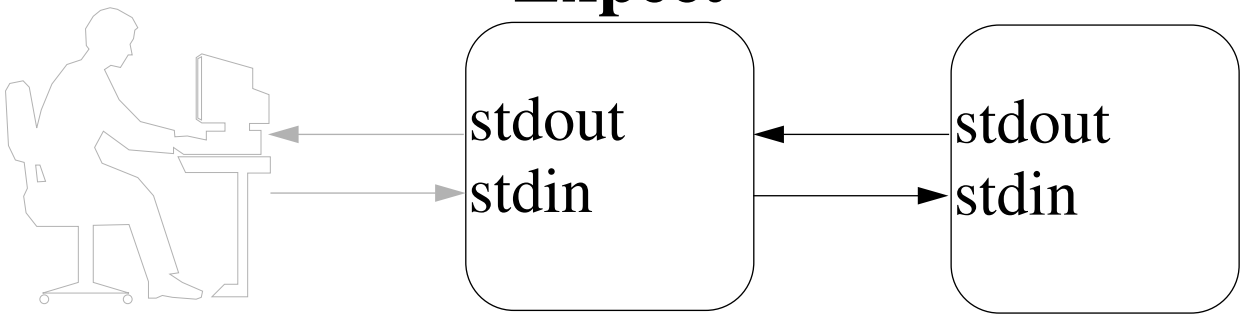
Shell vs. Expect

Shell



- designed for one-way pipes
- can’t interact with interactive programs

Expect



- designed for any-way pipes
- can interact with interactive programs

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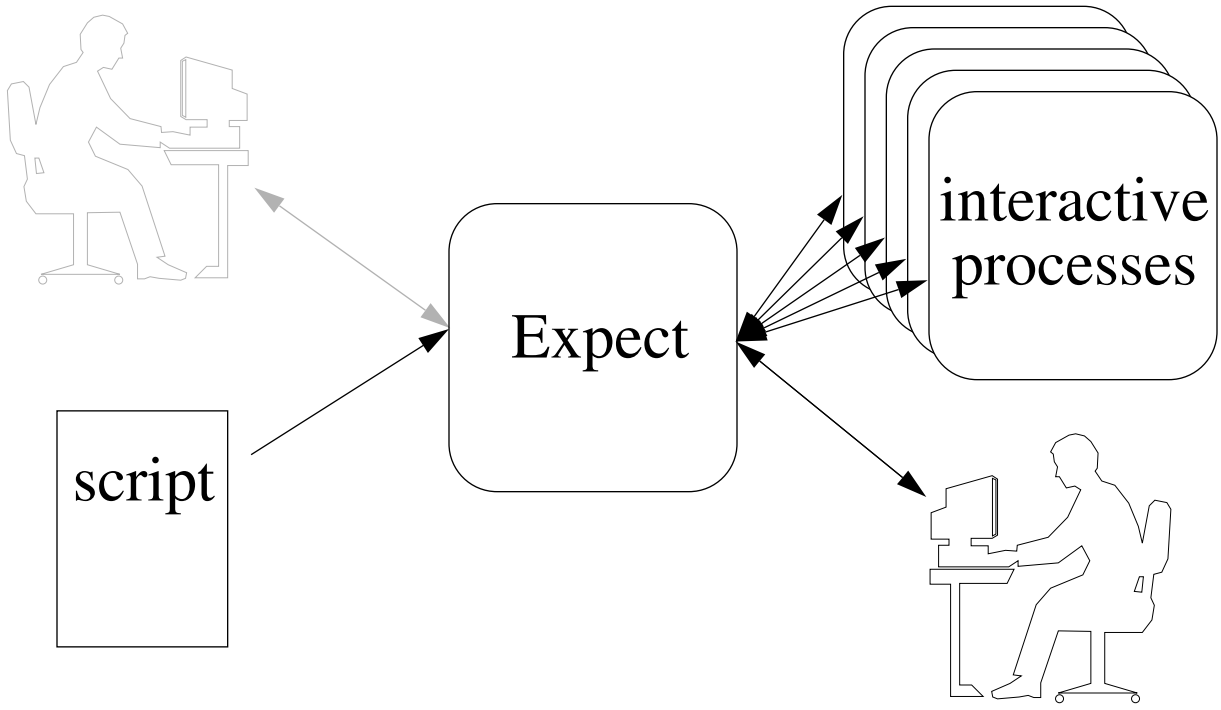
Features of Expect



- **pseudottys**
- **job control**
- **scripting language – Tcl**
- **user interaction**

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Scripting language

Tcl: a shell-like extensible interpreter by Ousterhout, Winter 1990 USENIX

New and interesting commands are:

- send
- expect
- spawn
- interact

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Example: rogue

```
while 1 {
        spawn rogue
        expect "Str: 18" {break} \
                "Str: 16"
        close
}
interact
```

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Example: callback

```
spawn tip modem
expect "connected"
send "ATDT[index $argv 1]\r"
set timeout 60
expect "CONNECT"
```


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Example – chess

```
spawn chess; set ken      $spawn_id
spawn chess; set dennis $spawn_id
send "first"
while 1 {
        move ken
        move dennis
}

proc move {who} {
        read_move
        set spawn_id $who
        send_move
}
```


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Expect solves problems with programs that:

- demand interactivity
- cross boundaries
- read and write /dev/tty
- flush input
- behave differently interactively
- passing control from/to user/script
- are ostensibly non-interactive
- have poorly-written interfaces
- never designed to work together
- dynamic/complex pipes/redirect'n

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Conclusion

Expect cures those (formerly) uncontrollable fits of interaction

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Expect

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"Hard at work creating the standard core dump"