RECORD: An Extension For X Protocol Capture

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What does RECORD do?

- record the X protocol stream of another application

- record device events

Who Cares?

Anyone writing X applications. Automated testing!

- Session capture
- Session playback

How does a recording application specify:

- which clients to record?
- which protocol messages to record?
- when start and stop recording?

Answer: the RECORD context

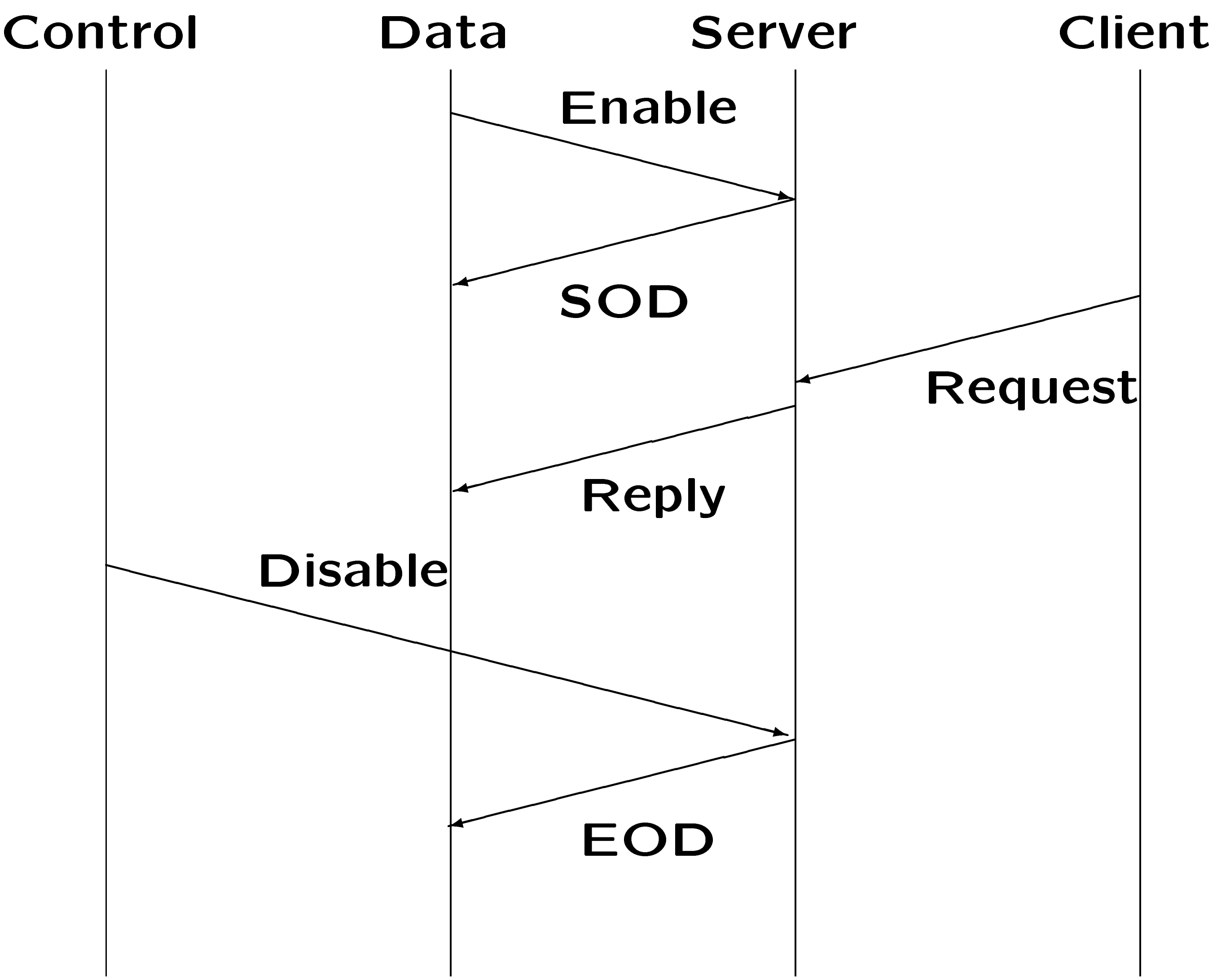
- Operations on a context:
  - CreateContext / FreeContext
  - RegisterClients / UnregisterClients
  - EnableContext / DisableContext
  - GetContext

Specifying Clients to Record

- Specific client
- CurrentClients
- FutureClients
- AllClients

Specifying Protocol Messages to Record

```
RECORDRANGE
    [CARD8 first, last] core-requests
    [CARD8 first, last] core-replies
    [CARD8 first, last] delivered-events
    ...
```


Control
Data
Server
Client
Enable
SOD
Request
Reply
Disable
EOD

Synchronous and Asynchronous Operation

- XRecordEnableContext(dpy, context, callback, closure)
- XRecordEnableContextAsync(dpy, context, callback, closure)

Applications Using RECORD

- automated testing
- xscope
- benchmarks, demos
- keystroke counter, screen saver

Stupid RECORD Tricks

- Determine the byte order of the server.
- List all clients currently connected to the server.
- Monitor client connections and disconnections.

RECORD vs. XTrap

- XTrap has input synthesis, statistics gathering
- RECORD has ability to capture all X protocol

RECORD vs. relay proxy

Relay proxy:

- cannot record device events
- is less efficient
- is more intrusive

Status of RECORD

- implementation
- standardization