

# Meet Stratoshark: Wireshark's Baby Brother

Josh Clark

<https://github.com/je-clark/self-25-stratoshark>

# Agenda

- Introduction
- What are system calls?
- What data do Wireshark and Stratoshark examine?
- Demo

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# Introduction

- B.S. and M.S. in Computer Engineering
  - Spent several semesters breaking Linux trying to optimize networking
- Principal Performance Engineer
  - Uses expertise in network protocols and Linux internals to identify bottlenecks in distributed systems

[www.jeclark.net](http://www.jeclark.net) | [www.github.com/je-clark](https://www.github.com/je-clark)

# What are System Calls?

```
With open(r'./file.txt') as file:  
    contents = read(file)
```

# What are System Calls?

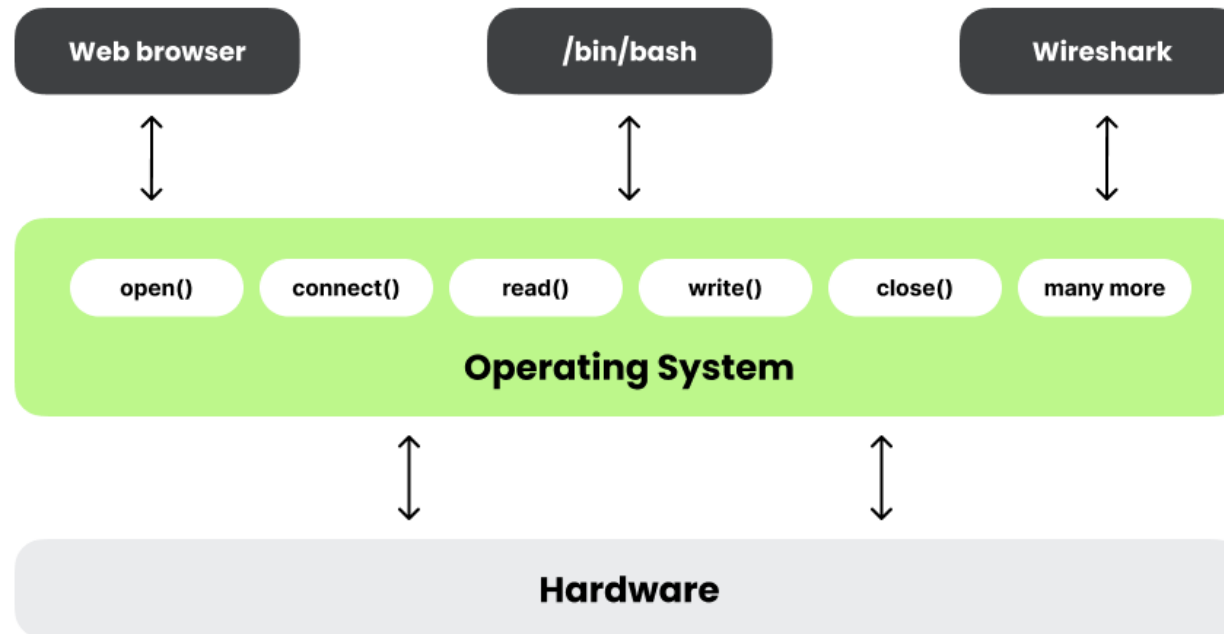
```
#include <stdio.h>
#include <stdlib.h>

int main() {
    FILE *file = fopen("./file.txt", "r");
    char *contents = malloc(filesize + 1);

    fread(contents, 1, filesize, file);
    contents[filesize] = '\0';

    fclose(file);
    return 0;
}
```

# What are System Calls?



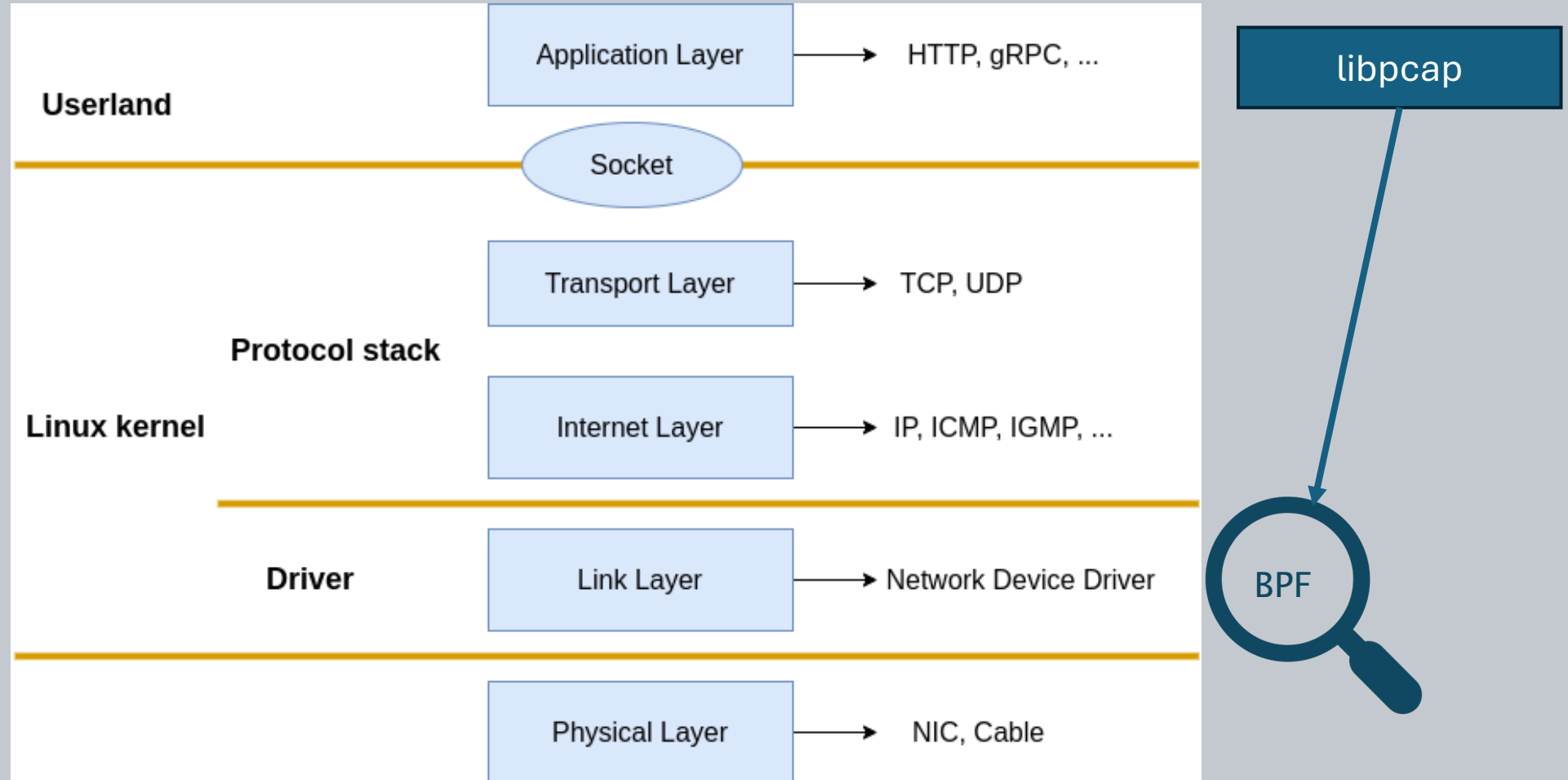
<https://blog.wireshark.org/2025/01/those-arent-packets/>

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# What System Calls Are Out There?

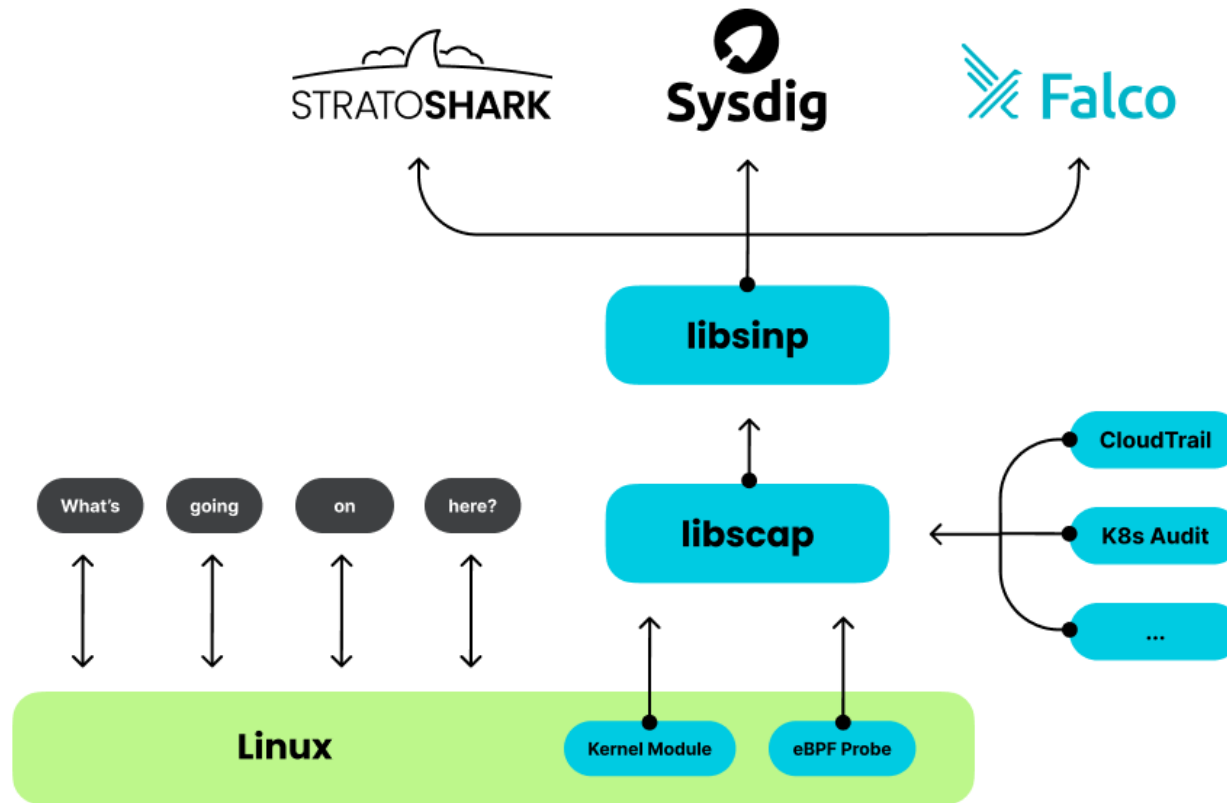
<https://filippo.io/linux-syscall-table/>

# How Do We Capture Packets?





# How Do We Capture System Calls?

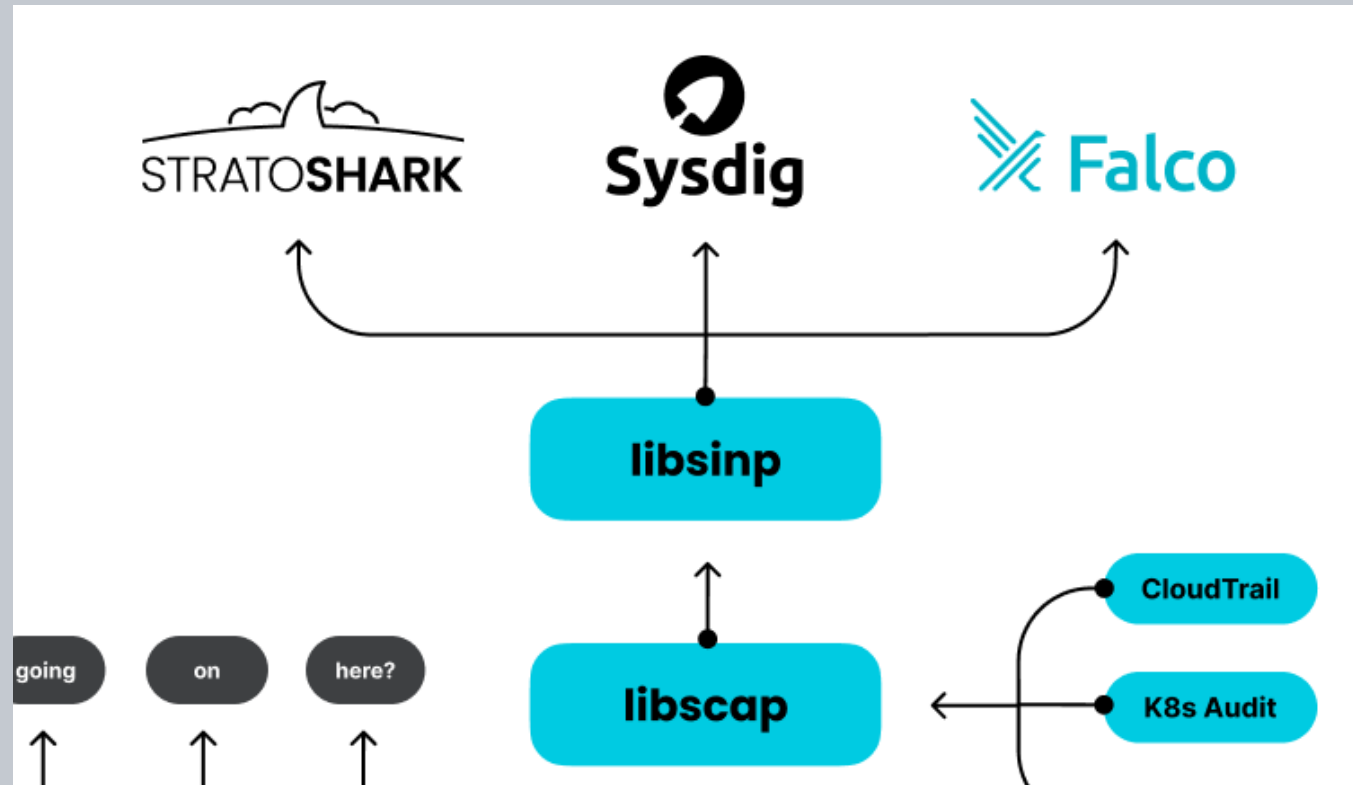


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# How Do We Capture System Calls?

<https://github.com/draios/sysdig>



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# Demo 1: HTTP

- `http_packets.pcapng`
- `http_syscalls.scap`

# Demo 2: SCP File Transfer

- scp\_packets.pcapng
- scp\_syscalls.scap

# Current Limitations

- Unable to see some inter-process and kernel communication
  - Statically linked libraries (e.g. nginx and openssl)
  - Shared memory locations (e.g. getdents64())
- sysdig missing features that other syscall tools include
  - Strace gives you more data for getdents64() than sysdig
- No Windows or MacOS support
  - Gitlab issue is open for Windows procmon support

# Questions & Feedback

