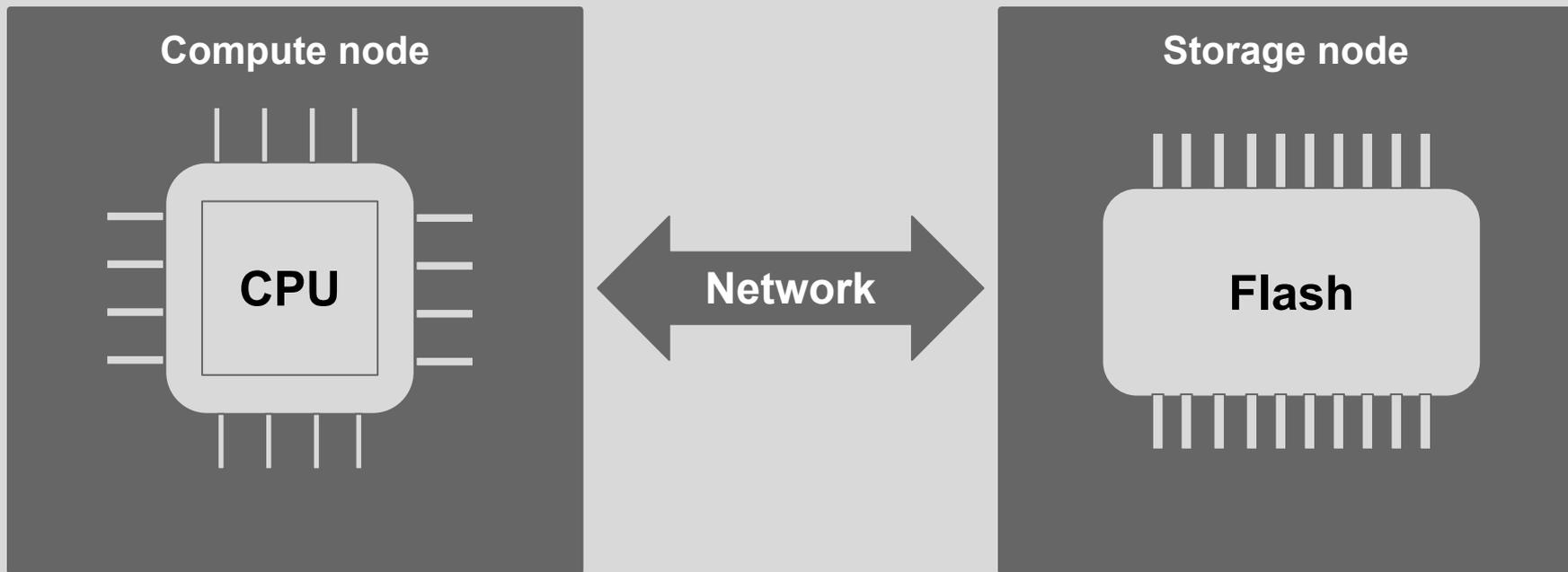


Can eBPF save us from the Data Deluge?

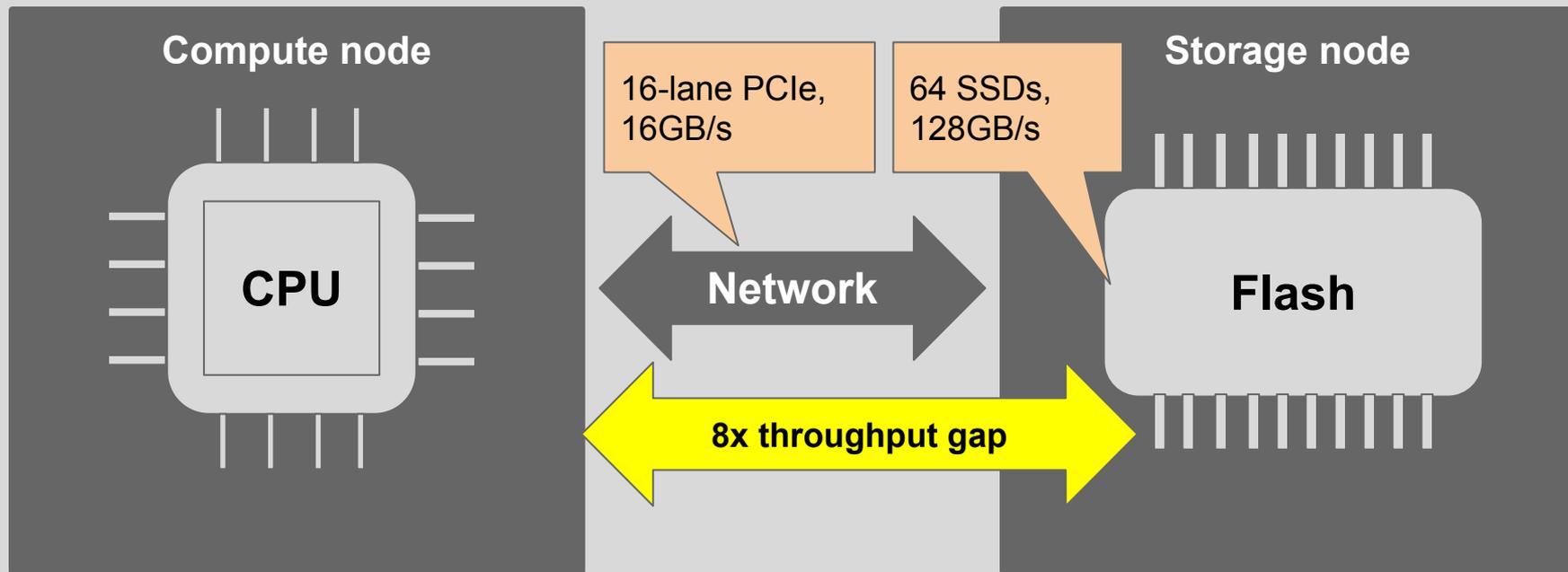
A case for file filtering in eBPF



The data deluge on modern storage



The data deluge on modern storage



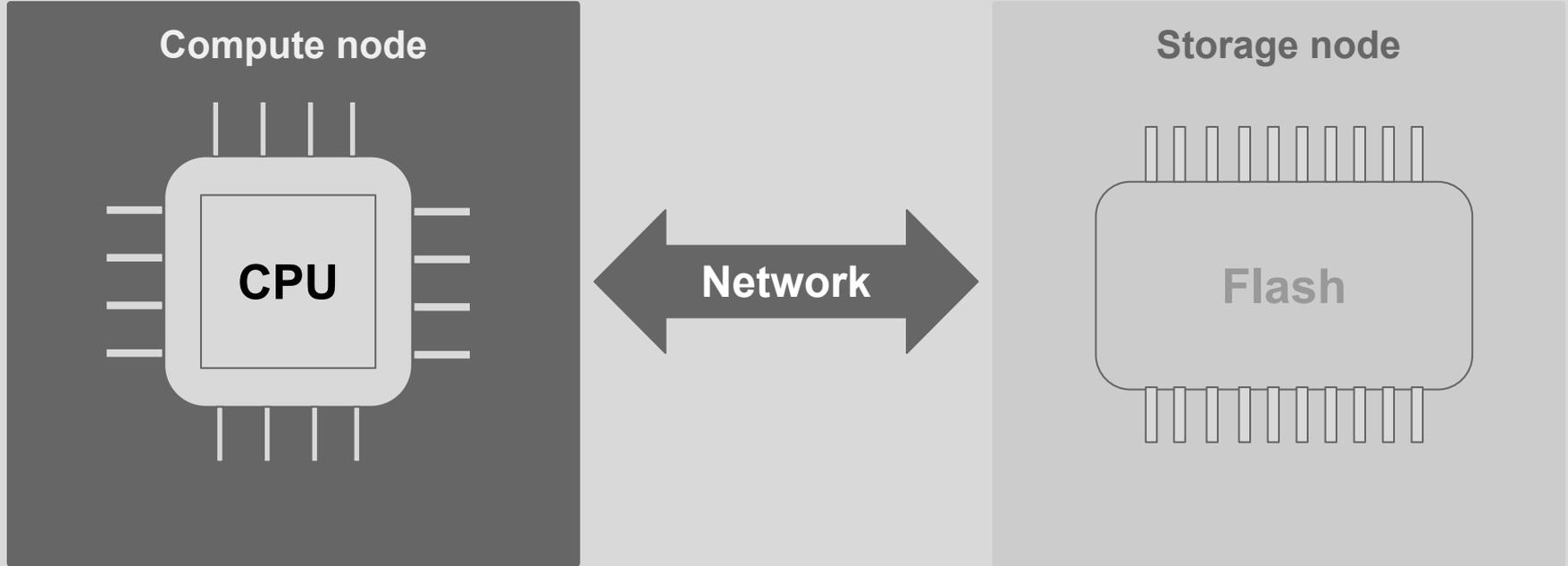
whoami

- **Giulia Frascaria**
- **PhD student in Vrije Universiteit Amsterdam**
- **atLarge research group**
- **Work with eBPF**

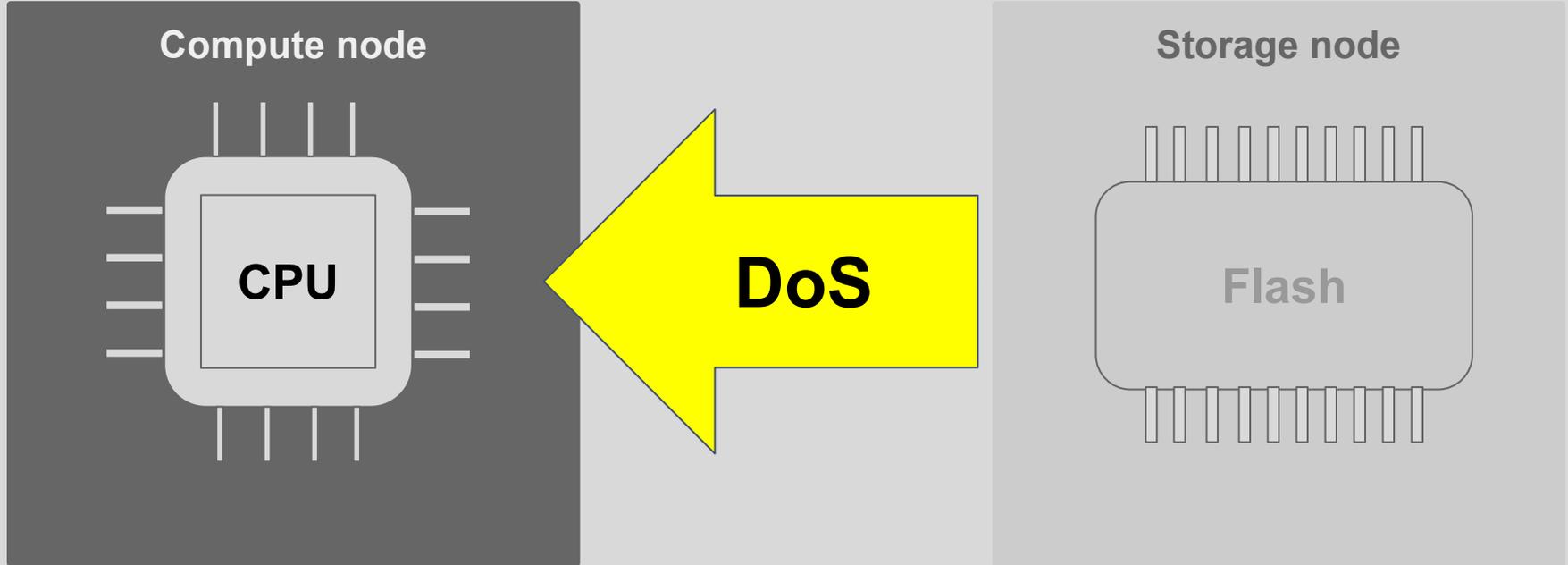
whoami

- Giulia Frascaria
- PhD student in Vrije Universiteit Amsterdam
- atLarge research group
- Work with eBPF **for storage!**

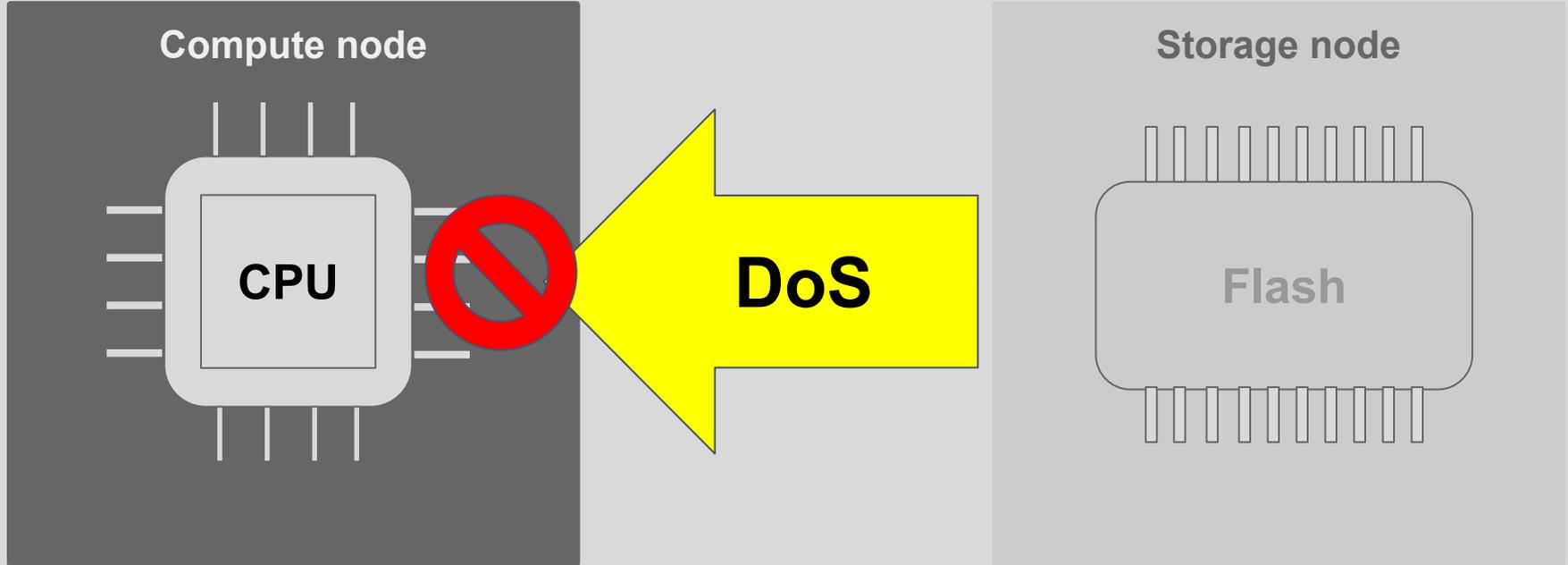
eBPF and DoS



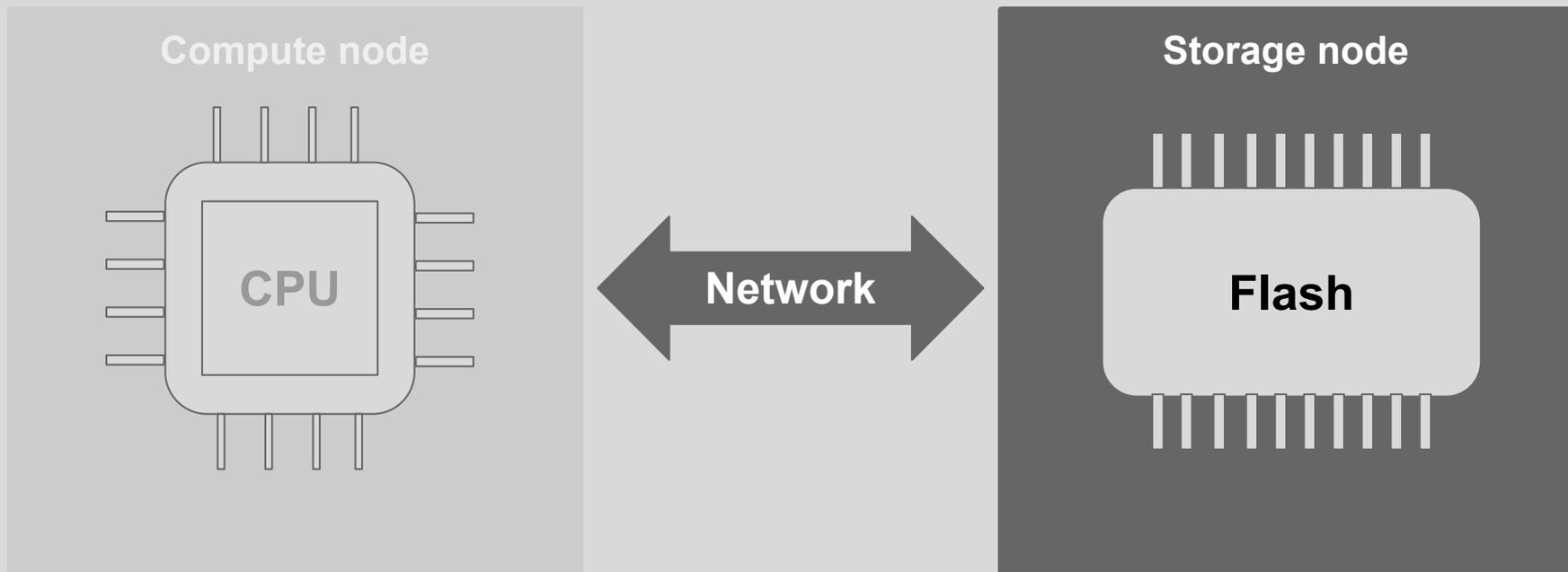
eBPF and DoS



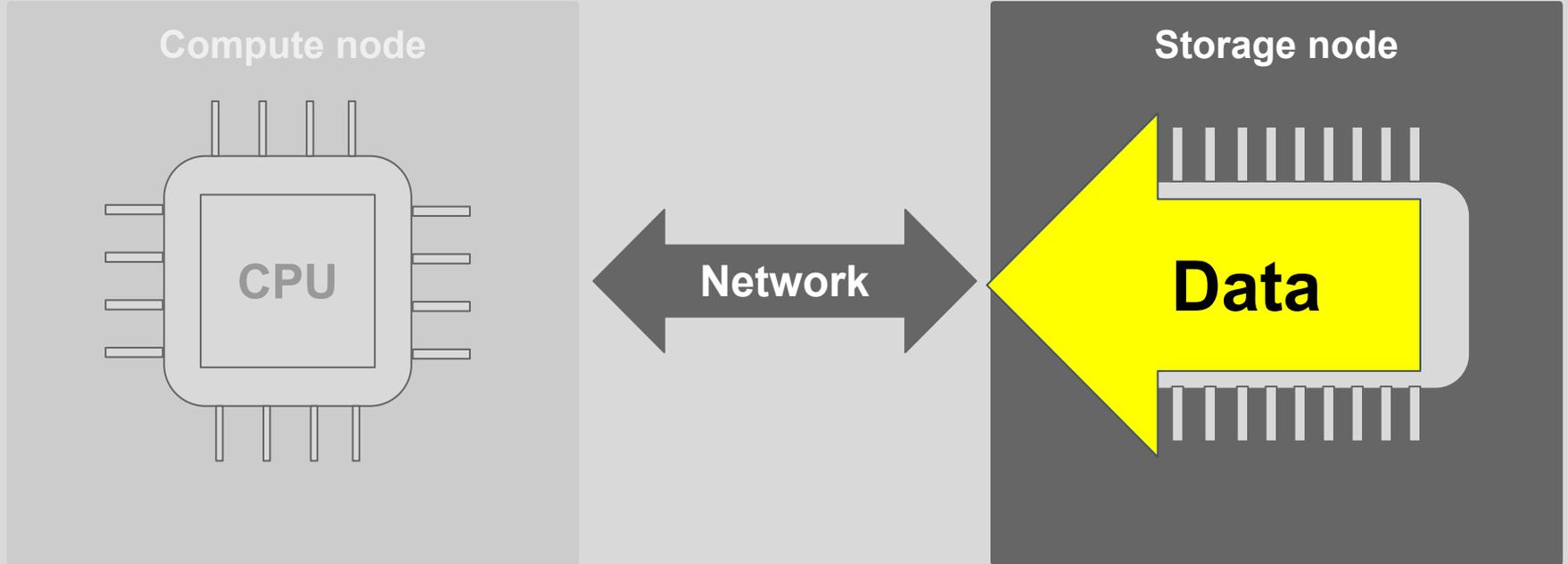
eBPF and DoS



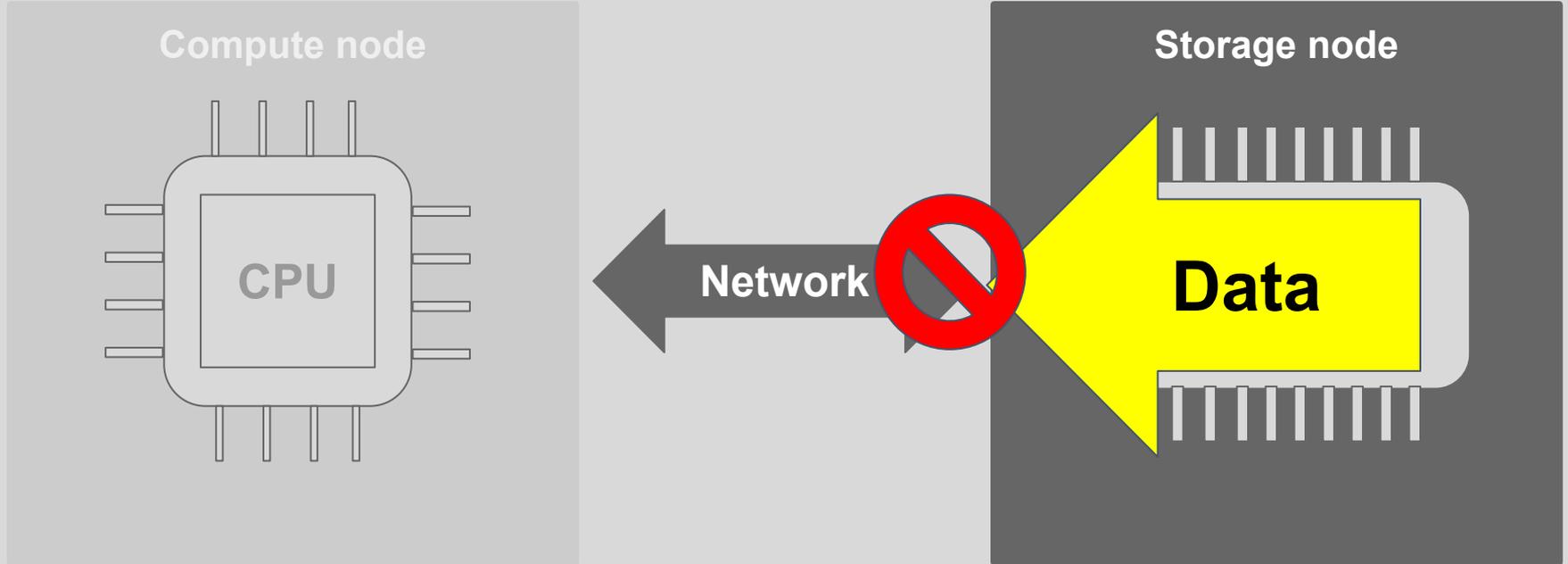
DoS in reverse!



DoS in reverse!



DoS in reverse!



So similar yet so different

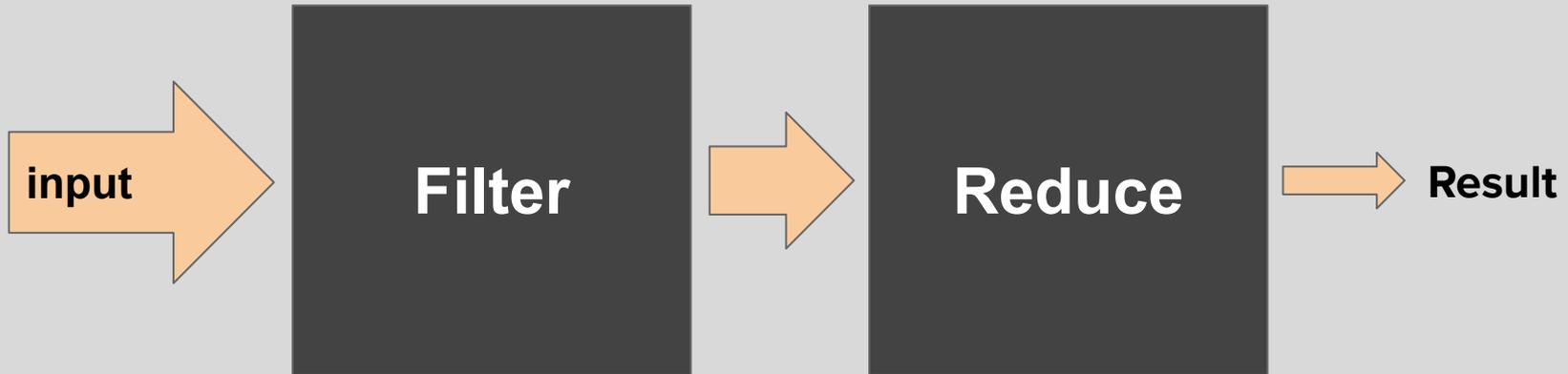
- **DoS is malicious**
- **Data transfer is business-critical**
- **We can blindly drop DoS**

So similar yet so different

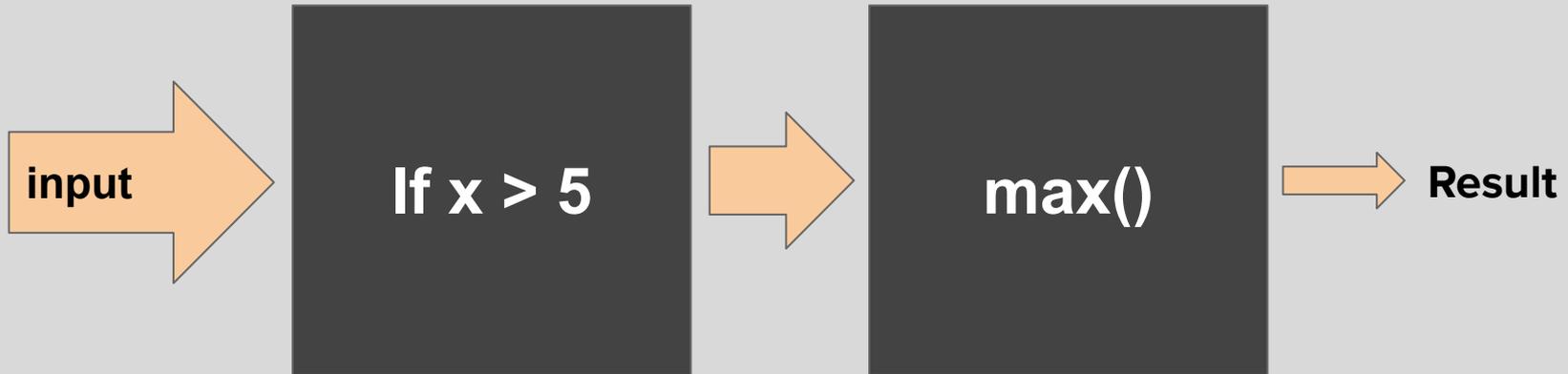
- DoS is malicious
- Data transfer is business-critical
- We can blindly drop DoS

But could we reduce data transfer size?

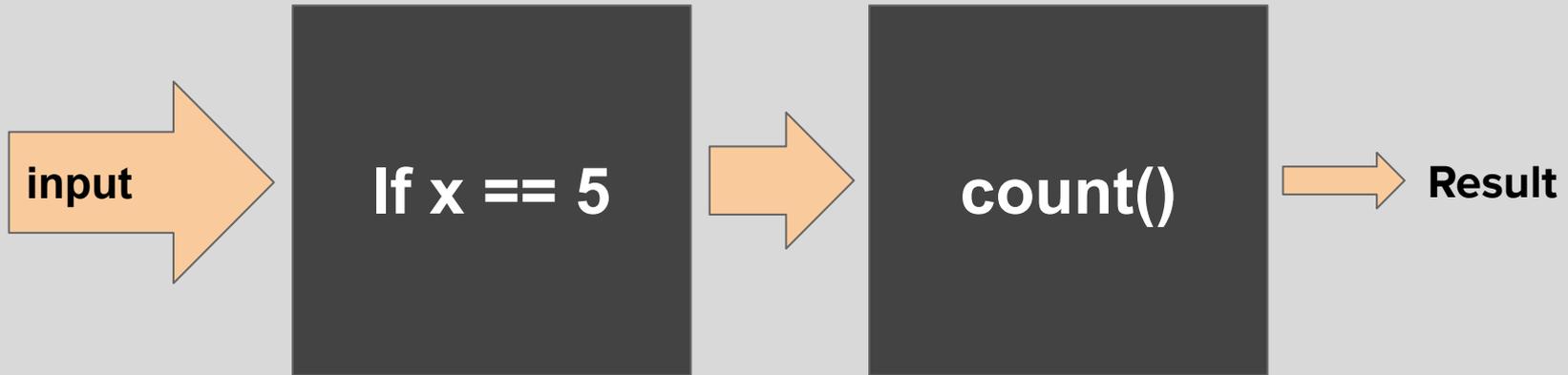
eBPF filter-reduce



eBPF filter-reduce



eBPF filter-reduce



Promising, but not ready yet

- Ideally, same powers as networking stack
- Right now requires kernel modification
- Limited computing power

Could this be the next step?

DEVELOPMENT / CONTRIBUTED

How io_uring and eBPF Will Revolutionize Programming in Linux

21 Apr 2020 8:49am, by Glauber Costa

DEVOPS

eBPF - Rethinking the Linux Kernel

LIKE

DISCUSS



DEVELOPMENT / LINUX

How eBPF Turns Linux into a Programmable Kernel

8 Oct 2020 6:00am, by Joab Jackson

https://thenewstack.io/how-io_uring-and-ebpf-will-revolutionize-programming-in-linux/

<https://thenewstack.io/how-ebpf-turns-linux-into-a-programmable-kernel/>

<https://www.infoq.com/presentations/facebook-google-bpf-linux-kernel/>