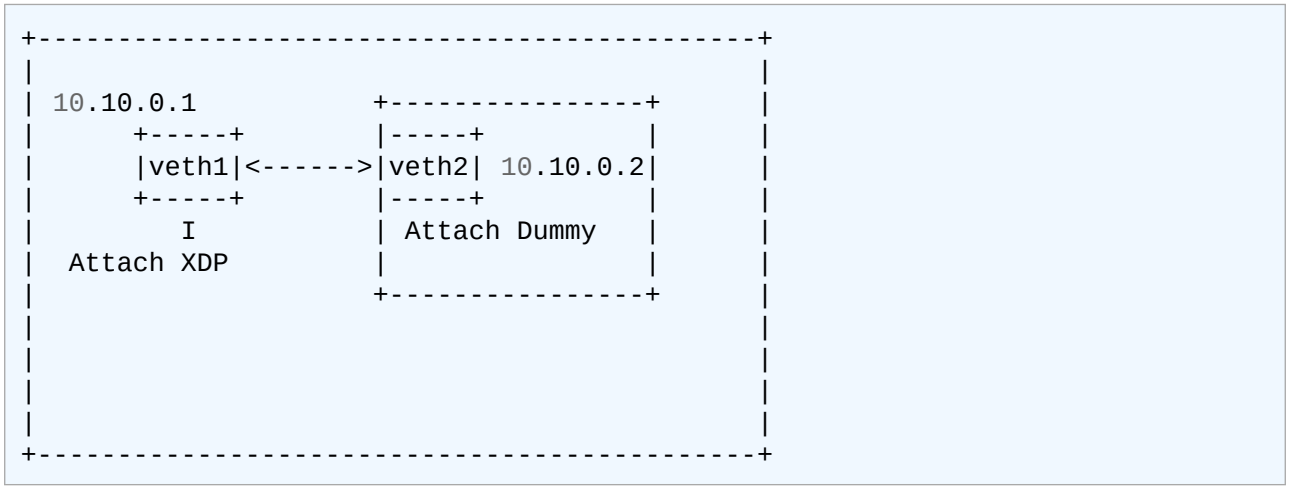
First eBPF Program

```c
#include <linux/bpf.h>
#include <bpf/bpf_helpers.h>

SEC("xdp")
int xdp_main(struct xdp_md *ctx)
{
    bpf_printk("here");
    return XDP_PASS;
}

char LICENSE[] SEC("license") = "GPL";
```

First Time Running eBPF Program

Setup Environment:

```
sudo ip netns add n2
sudo ip link add veth1 type veth peer name veth2 netns n2
sudo ip link set veth1 up
sudo ip addr add 10.10.0.1/24 dev veth1

sudo ip netns exec n2 ip link set veth2 up
sudo ip netns exec n2 ip addr add 10.10.0.2/24 dev veth2
```



Compile eBPF Program:

```
clang -S \
  -target bpf \
  -g -O2 -emit-llvm \
  -o NAME.bpf.ll NAME.bpf.c

llc -mcpu=probe -march=bpf -filetype=obj -o NAME.bpf.o NAME.bpf.ll

bpftool gen skeleton NAME.bpf.o name SKEL_NAME > NAME.skel.h
```

Compile Loader Program:

```
clang -g -O2 -o ./loader ./loader.c -lbpf
```

Reading BPF Trace Logs:

```
sudo cat /sys/kernel/tracing/trace_pipe
```

BPFTOOL

Listing attached eBPF Networking Programs:

```
sudo bpftool net
```

Listing Loaded eBPF Programs

```
sudo bpftool prog
```

Generating Packets

Running NetCat Server (listen for packets):

```
nc -l -u 10.10.0.1 8080
```

Running NetCat Sending Packets:

```
printf "hello world\n" | nc -W 1 -N -u 10.10.0.1 8080
```

Using IPROUTE2 To Load XDP Programs

```
#! /bin/bash
ip link set dev veth2 xdp off
sudo ip link set dev veth2 xdp obj first.bpf.o sec xdp

on_signal() {
        ip link set dev veth2 xdp off
        exit 0
}

trap "on_signal" SIGINT SIGHUP
echo Hit Ctrl-C
while [[ true ]]; do
        sleep 5
done
```