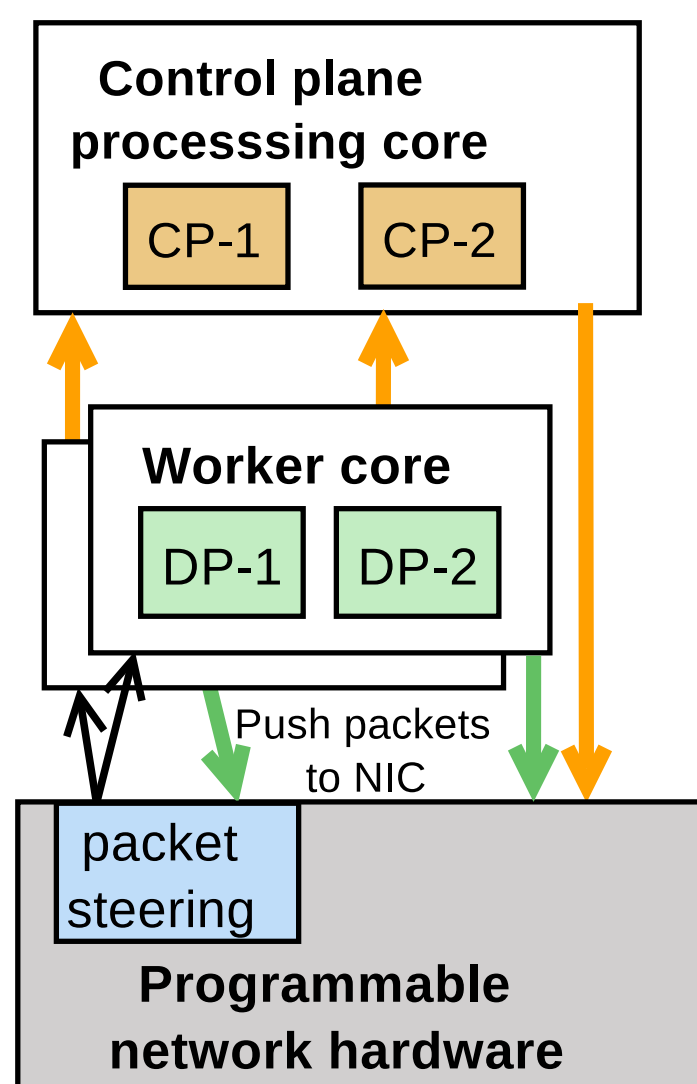
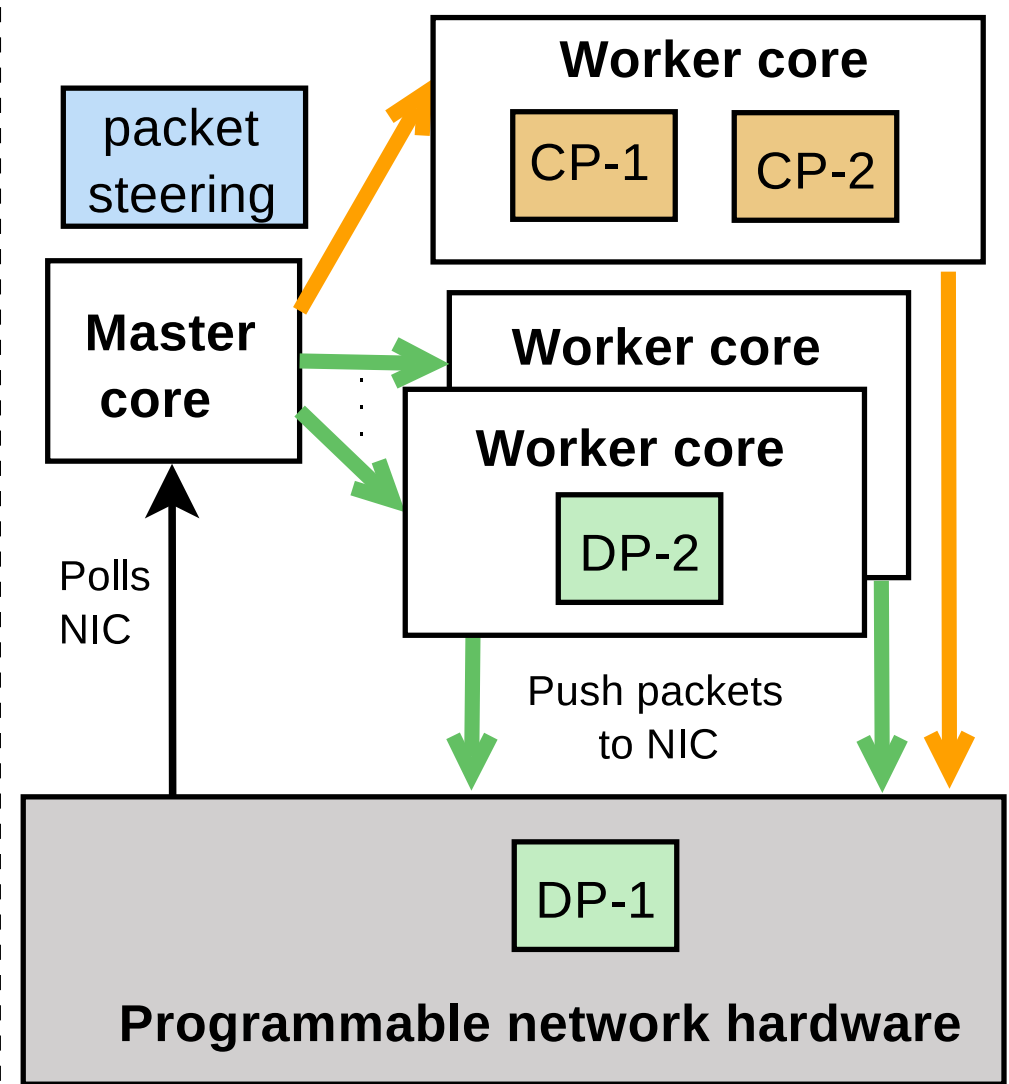


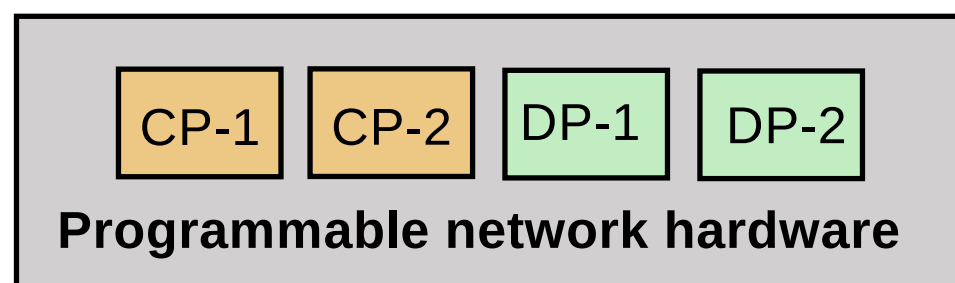
(a) DPDK-based software UPF design (SoftUPF)



(b) Packet steering offload design (SteerOffload)



(c) Dataplane offload design (DPOffload)



(d) Control plane offload design (CPOffload)

**UPF Dataplane Functions:**  
 DP-1: GTP encap/decap; verify bit rate  
 DP-2: Queuing for oversubscribed sessions

**UPF Control Plane Functions**  
 CP-1: Control plane packet processing  
 CP-2: Install dataplane rule