# FlowStalker: Comprehensive Traffic Flow Monitoring on the Data Plane Using P4

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- The P4 language was designed entirely for programming the data plane
- We present an efficient mechanism for general telemetry using programmable data planes
- Our mechanism capitalizes on data plane programmability to perform tasks that are usually performed solely by the control plane
  - Firstly, we present a monitoring system based on a two-phase monitoring scheme that runs directly on the data plane
  - Secondly, we introduce a flexible method for network data gathering, enabling "control-plane-free" consolidation of data from switches
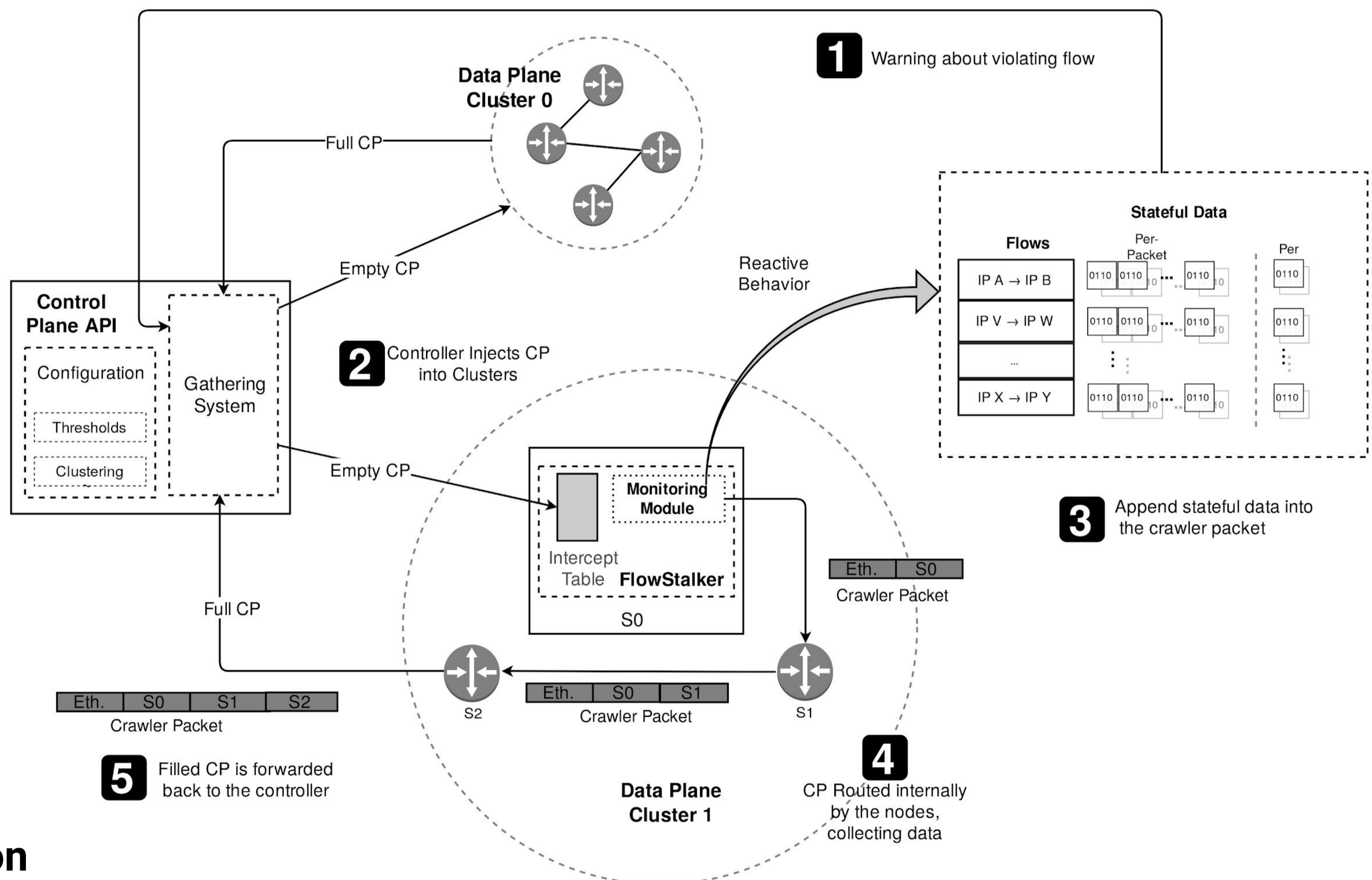
Evaluation
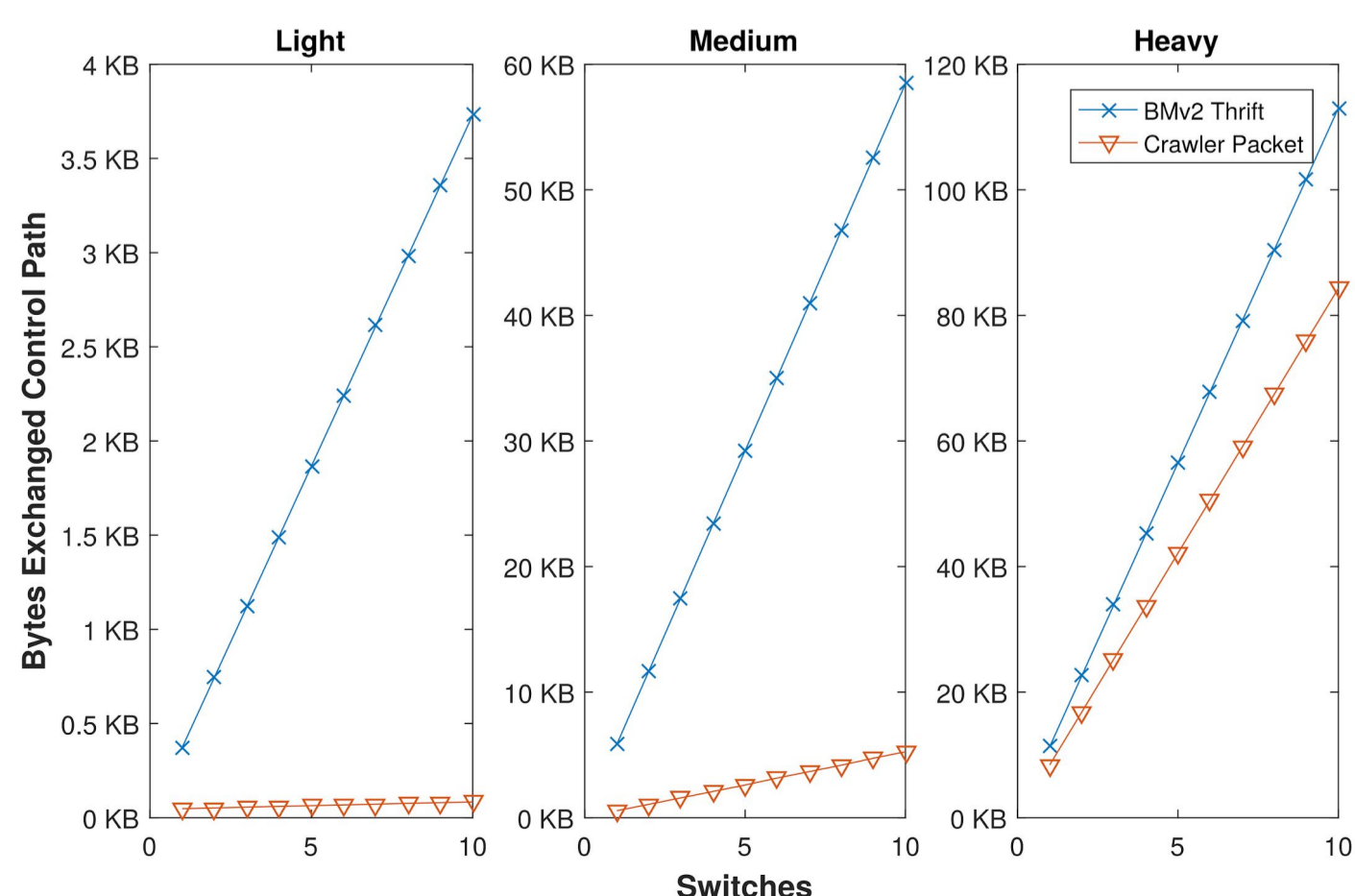
- We leverage programmability to create custom gathering protocols (Crawler Packets)
- The gathering overhead of our Crawler Packet is considerably smaller than that of the switch API
- Our paper was published on IEEE ICC '19
  - More details: https://ieeexplore.ieee.org/document/8761197/