

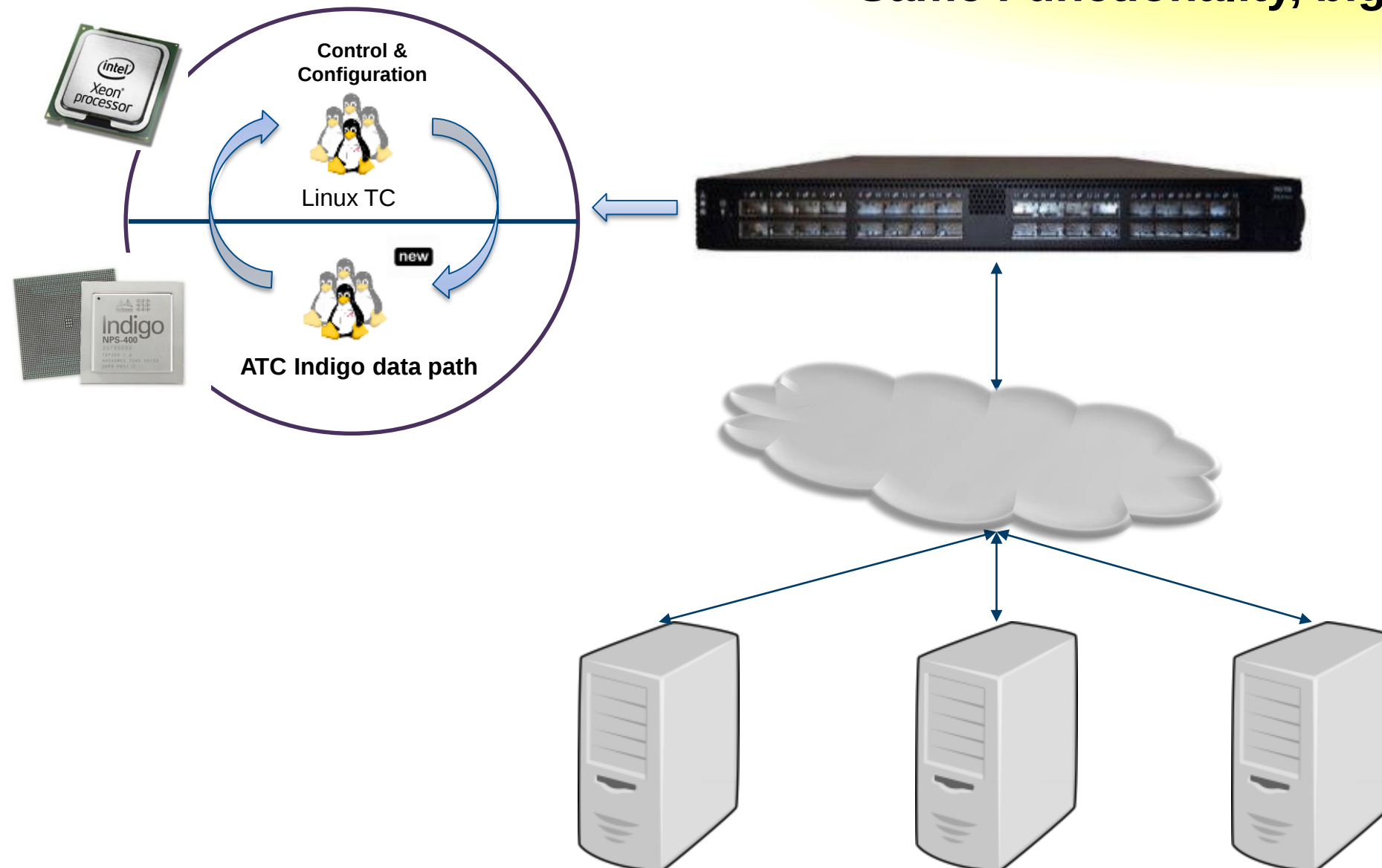


## Accelerating Linux Traffic Control with OpenNPU

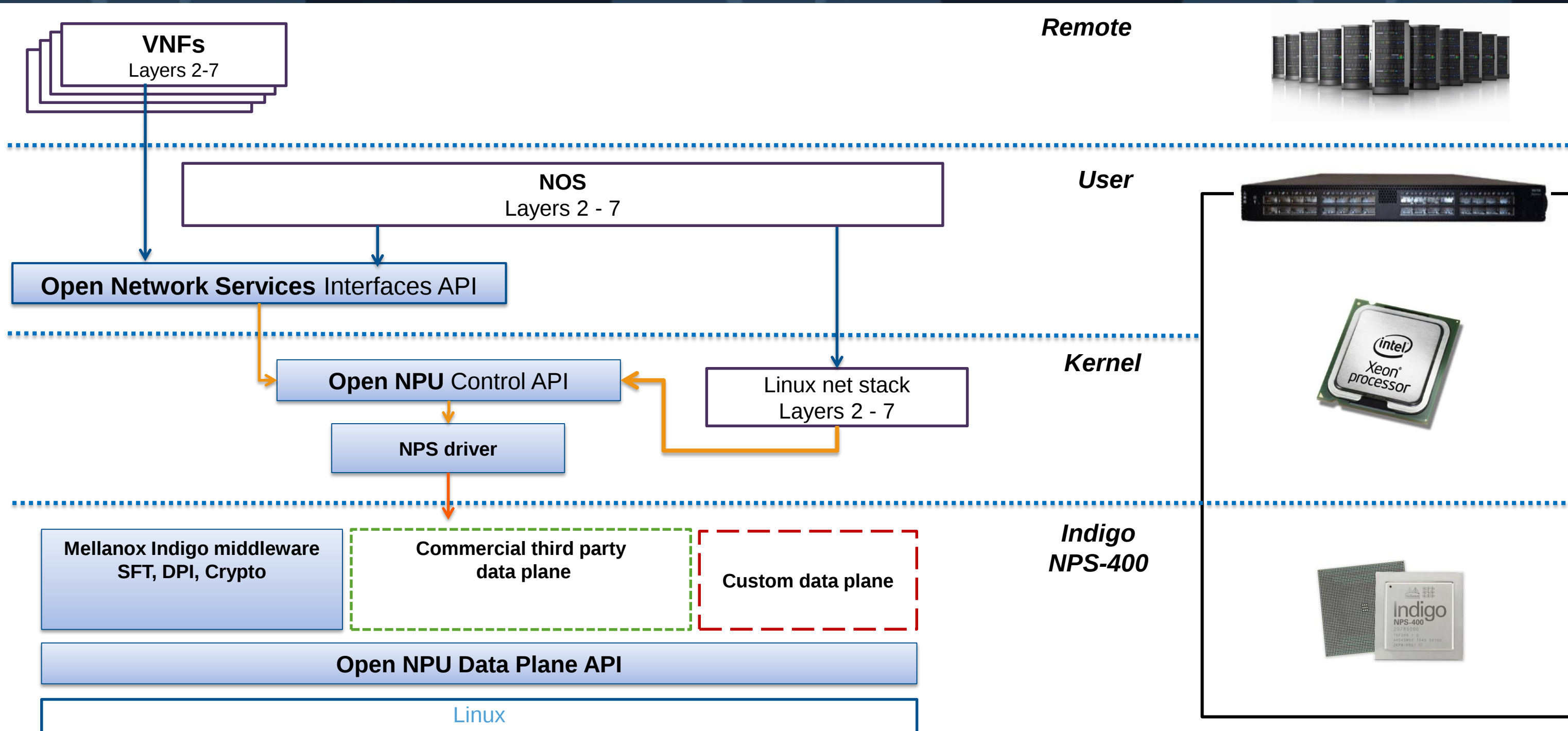
Eran D.

NetDev 2.1

ATC is TC with the data path offloaded to Indigo NPS.  
**Same Functionality, bigger scale & Performance**



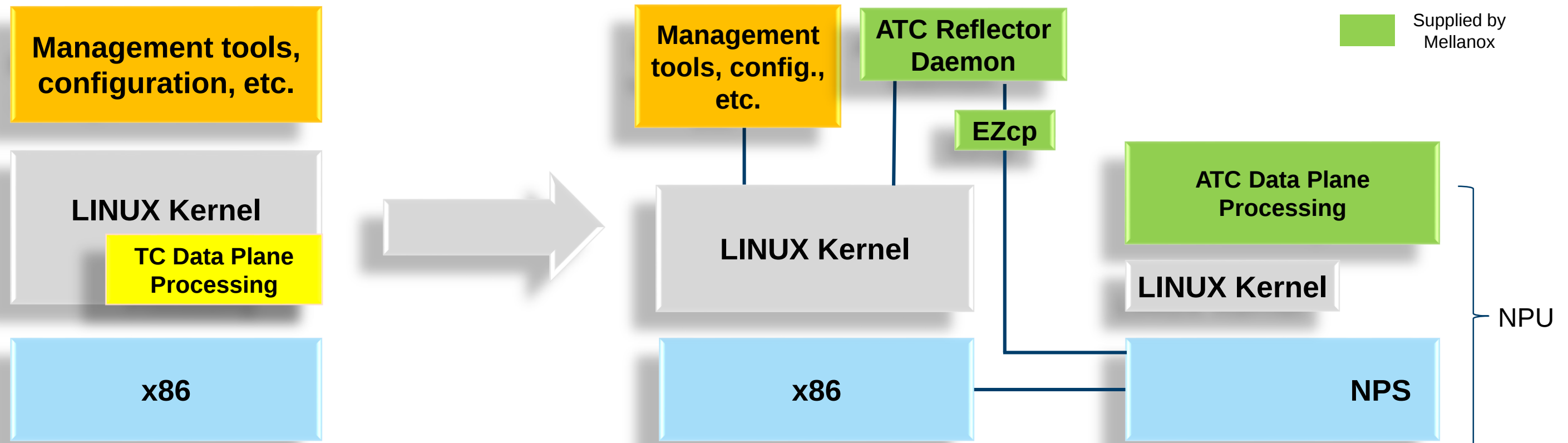
# Architectural Vision

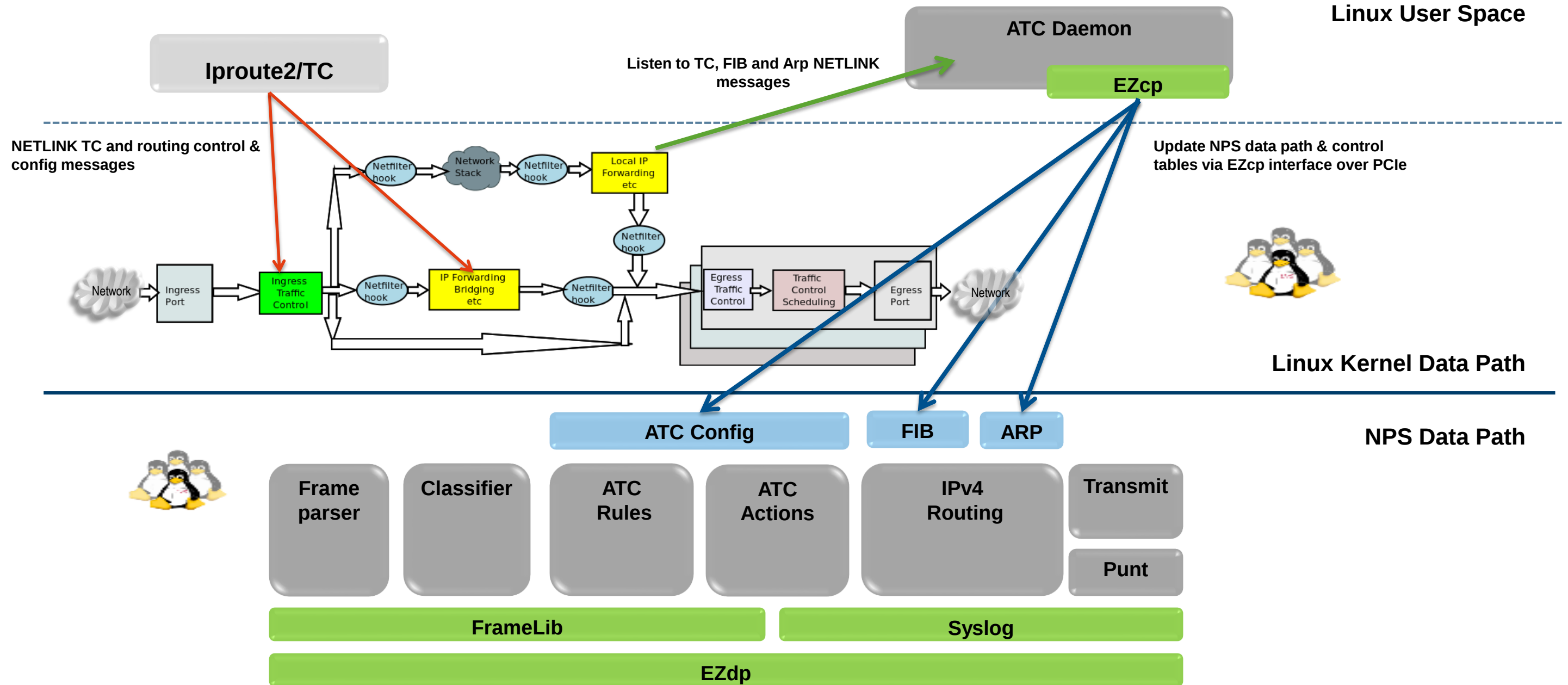


- Indigo NPS-400 is a Network Processor
- C-programmable packet processor at ultra-high 400-Gigabit throughput
- supports all 7-layers
- Integrated hardware traffic management
- Various possible Network I/O
  - including 10GE, 40GE & 100GE
- 256 CTOP cores - 4K SMT threads
- Hardware acceleration engines
  - Crypto – up to 180Gbps of Ipsec
  - DPI
  - TCAM
- Commodity DDR (96 GB)
  - Unlimited tables, states, counters at wire-speed performance



# TC to ATC POC software migration



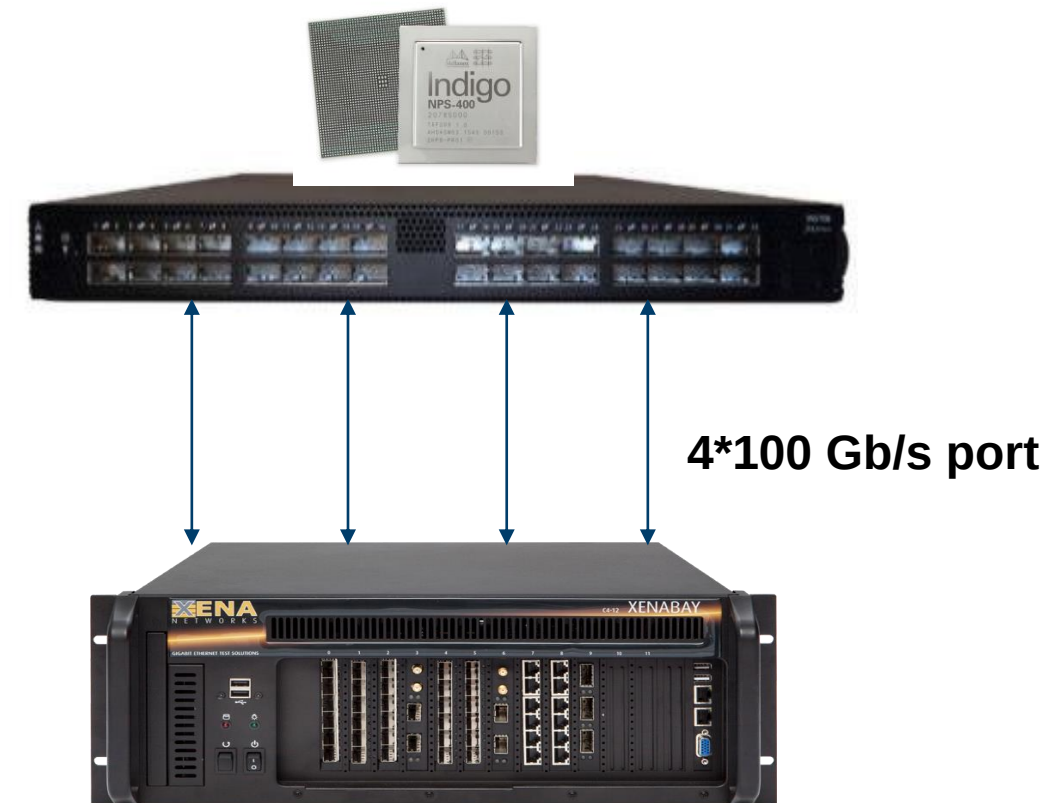


## ■ ATC feature set:

- Ingress Qdisc only
- Flower Filter
- Actions: GACT, PEDIT, mirror redirect
- Statistics and timestamps
- TC look and feel
  - same CLI
  - same log mechanism

## ■ Performance

- 400Gbps (400 Bytes packet size)
- How do we tested:
  - setup:
    - 4x100GE ports connected to xena traffic generator
  - Configuration:
    - 1K TC filters per port
    - Each filter is attached to 2 actions:
      - › PEDIT – modify IP & update checksum
      - › Mirror – redirect
    - statistics collection & timestamp per action



# Thank you!



<http://www.opennpu.org>

**ATC:** <https://github.com/Mellanox/ATC>

