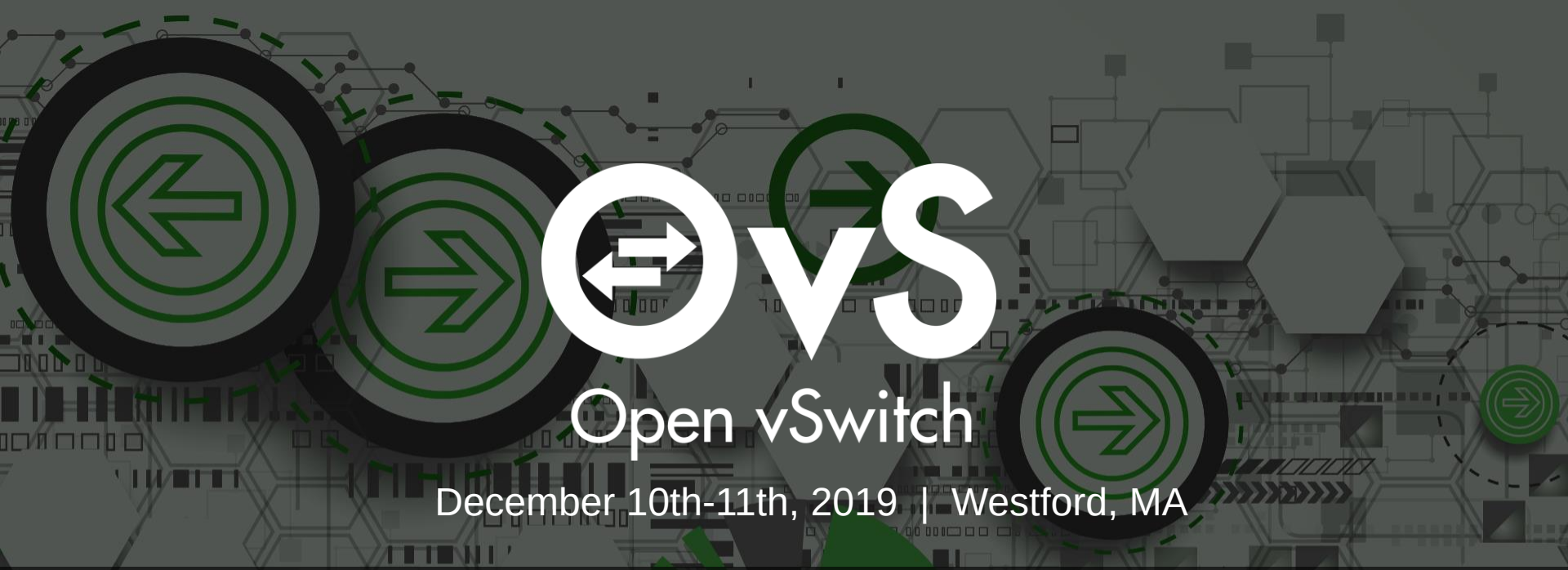


December 10th-11th, 2019 | Westford, MA

Next Steps for Software Datapath

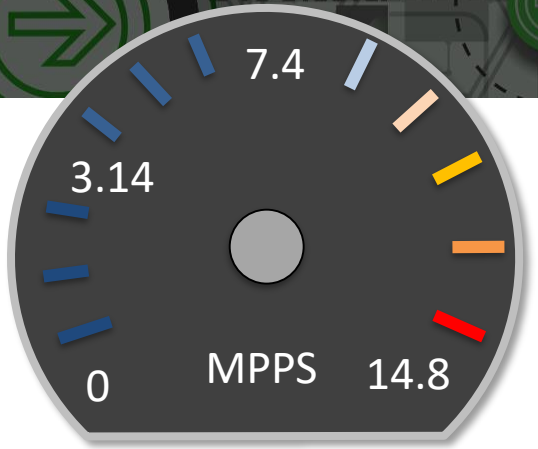
Harry van Haaren
Intel

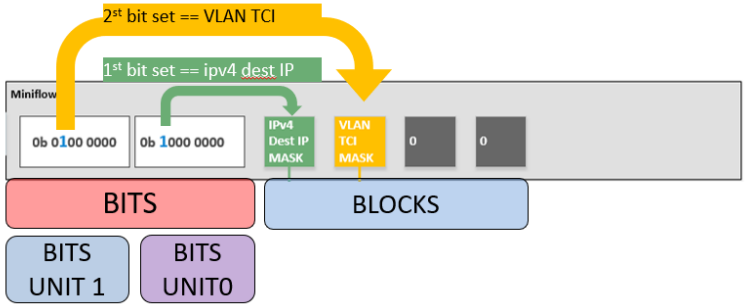
Introduction

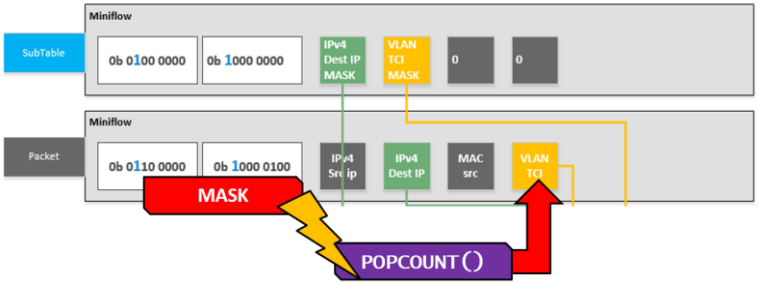
- **GOOD** is Higher Performance
- **GREAT** is “Batteries-Included” Experience

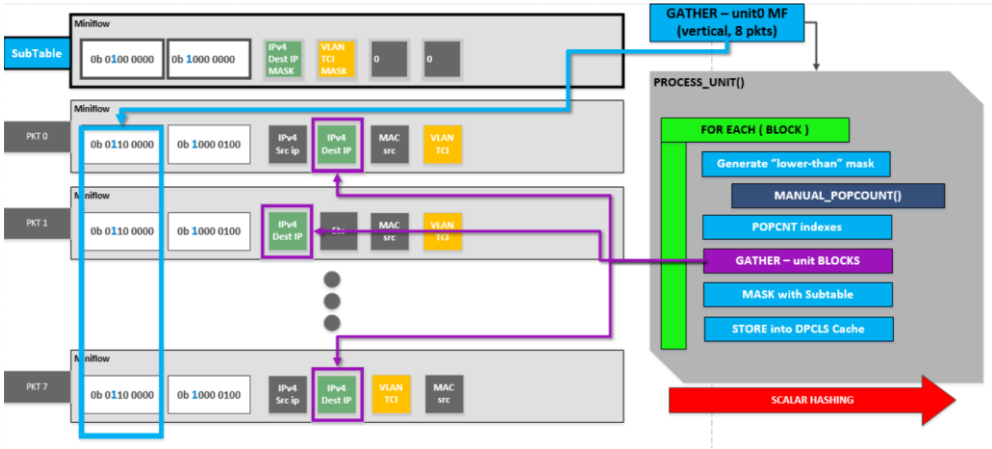
Performance

- The “SIMD DPCLS” talk at OVS ‘18







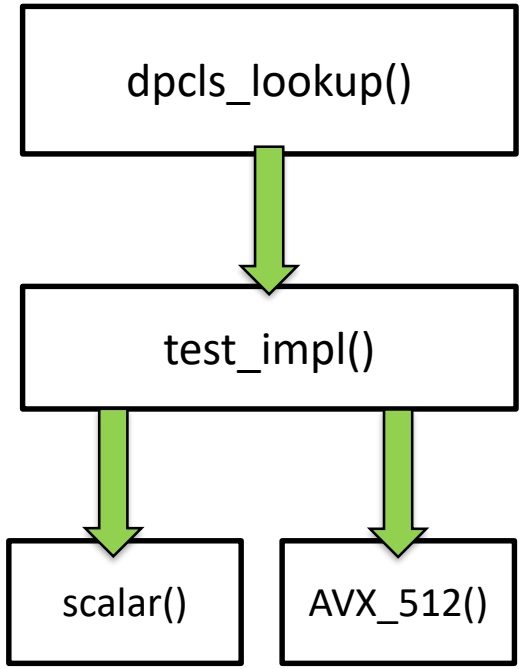


Batteries Included

- **Test & Validation**
  - Minimal Extra Effort per Release
  - Smart Automated Testing
- **Usability & Debug**
  - Users to Check Status
  - Power-Users to Configure
- **Packaged & Deploy**
  - Transparent Acceleration

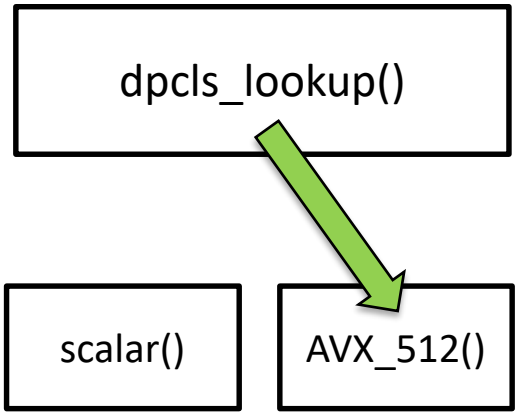
Test & Validation

- **ISA Optimized DPCLS**
  - Scalar
  - AVX-512
- **Automated Testing**
  - DPCLS Function Pointer re-use
  - “Delegator” implementation
  - Tests all other implementations
  - Validates results as Identical
  - Runs with all Unit Tests

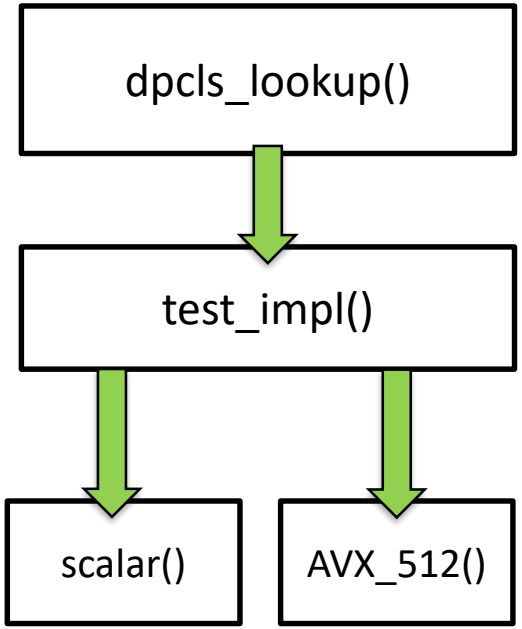


Test & Validation

DEPLOYED



TESTING

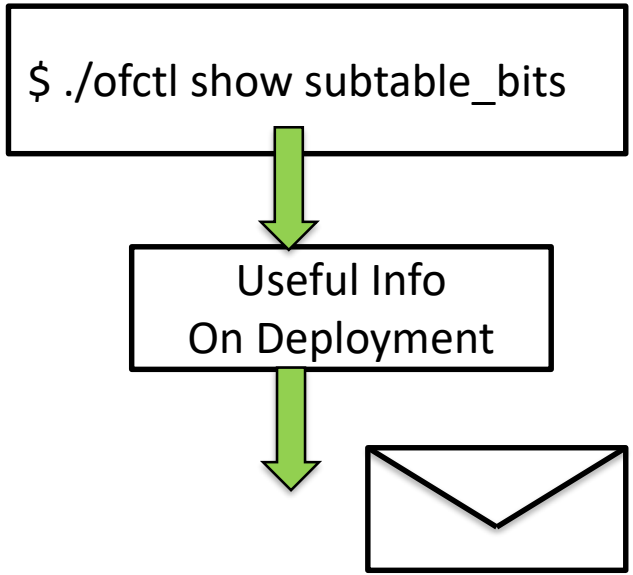


Usability & Debug

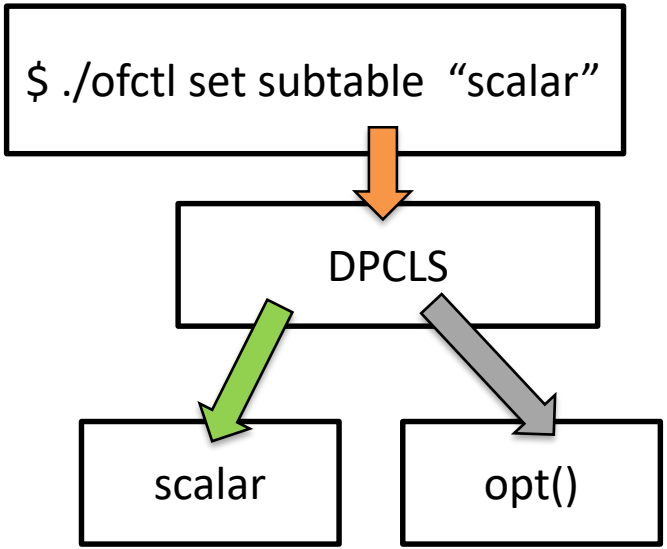
- **Easily View Status**
  - Understand Optimizations that are in use
  - Provide Feedback to OVS Community
- **Enable Power-Users to Configure**
  - Reset Optimized Version to Scalar
  - Sometime, Somebody will want this
    - Exact replication of a deployment?

Usability & Debug

User



Power User

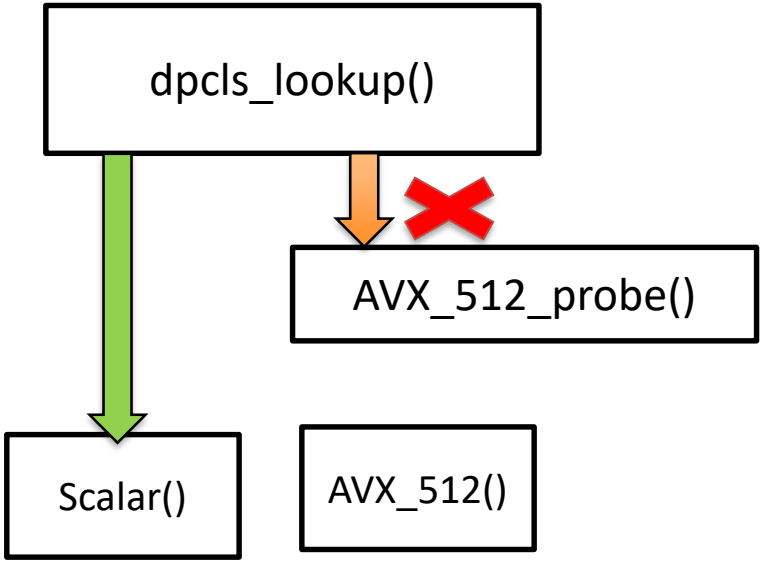


Package & Deploy

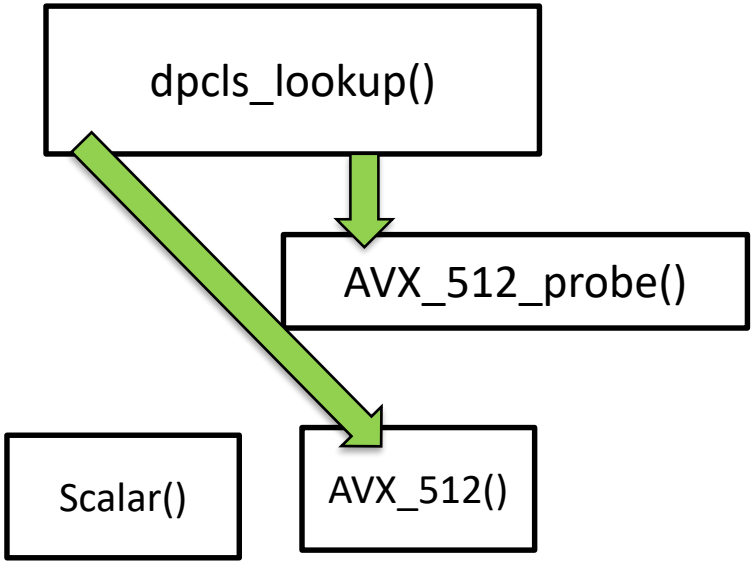
- **Runtime CPU Detection**
  - Required to “plug in” ISA-based optimizations
- **RFC/Patch v1 on mailing list soon**
  - Based on DPDK EAL CPU Detection
- **One Binary Runs Everywhere**
  - Build process updates

Runtime CPU Detection

CPU **without** ISA

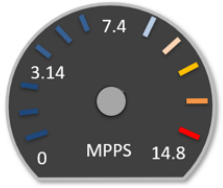


CPU **with** ISA

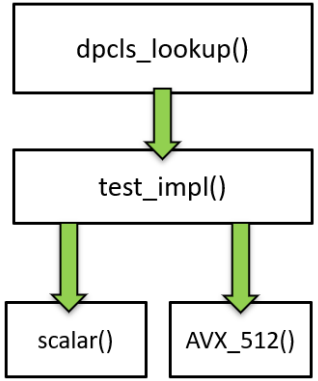


Summary

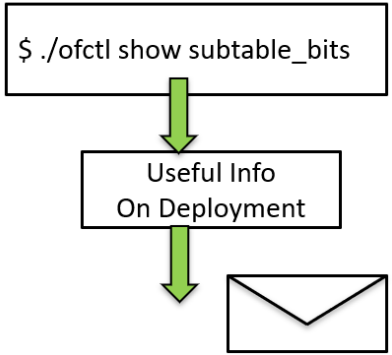
PERFORMANCE OPTIMIATIONS



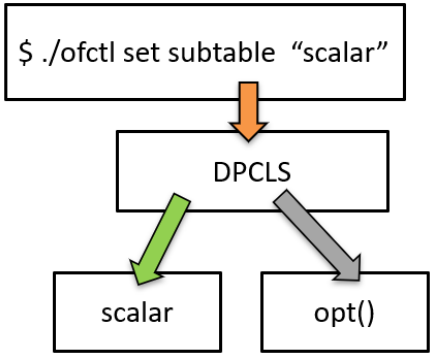
Validation



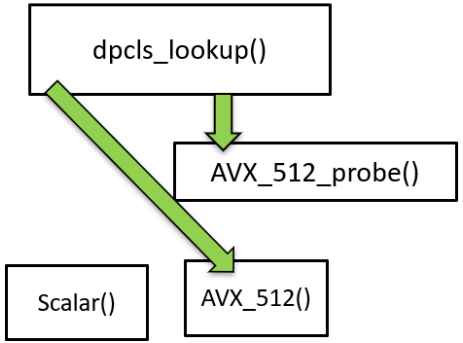
Usability



Easy Debug



Packaged



! Thanks !
? Questions ?

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