VNF offloading on multi-vendor P4 fabric controlled by ONOS via P4Runtime

In collaboration with Barefoot, Cavium, Netcope

- **ONOS**: P4Runtime-enabled SDN control plane
- **Fabric.p4**: open source multi-purpose leaf-spine fabric
  - Support programmable and fixed-function switches from many vendors
- **Spgw.p4**: implementation of 5G user plane VNF

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**Diagram:**

- **Base station**
- **GTP tunnels** (user traffic)
- **ONTOS**
- **Spine**
- **ToR**
- **Spgw.p4**: implementation of 5G user plane VNF
- **fabric+p4**
  - GTP termination, filtering, billing, etc.
- **fabric.p4**
- **P4Runtime**
  - P4 program deployment, table management, etc.
- **M-CORD (with P4 fast path)**
  - NFV/SDN platform for 5G edge services
- **Upstream router**