Virtualization of Crypto Accelerator

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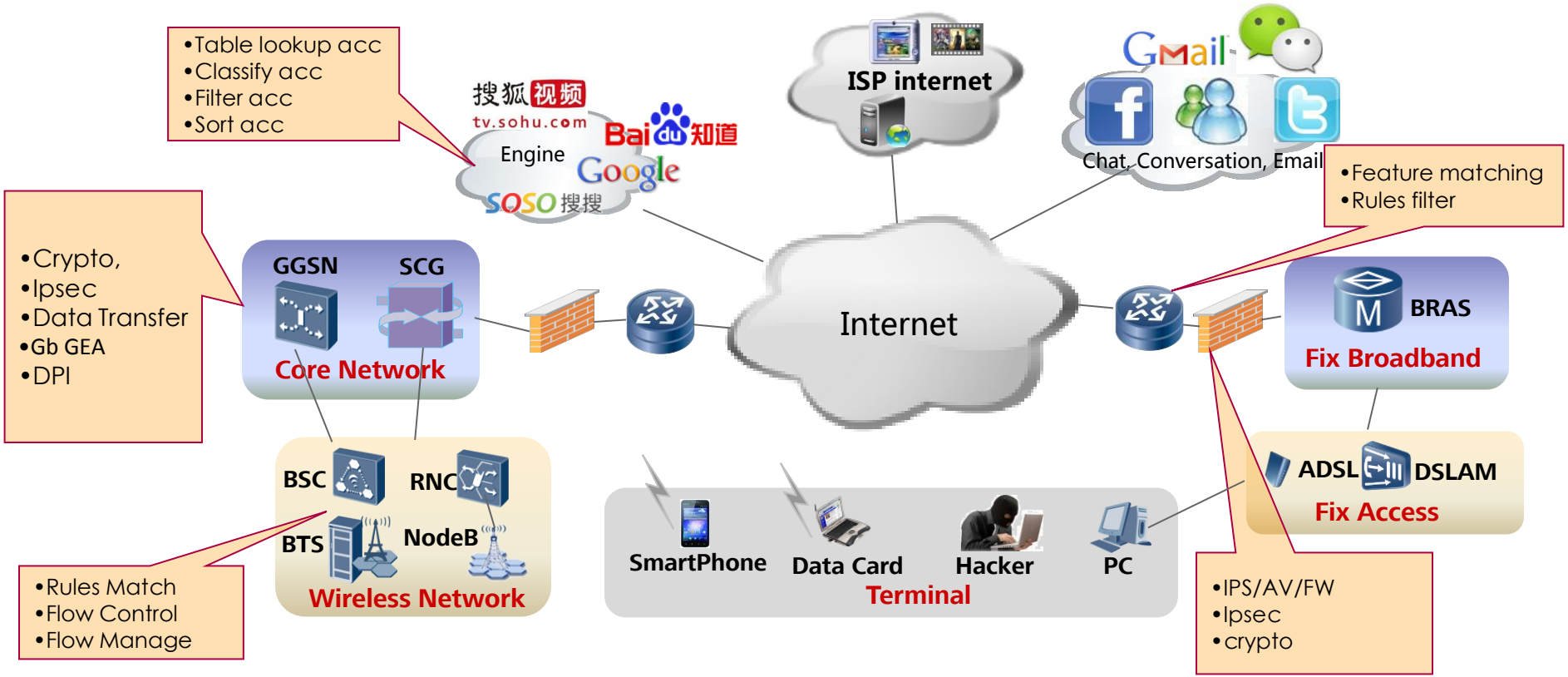
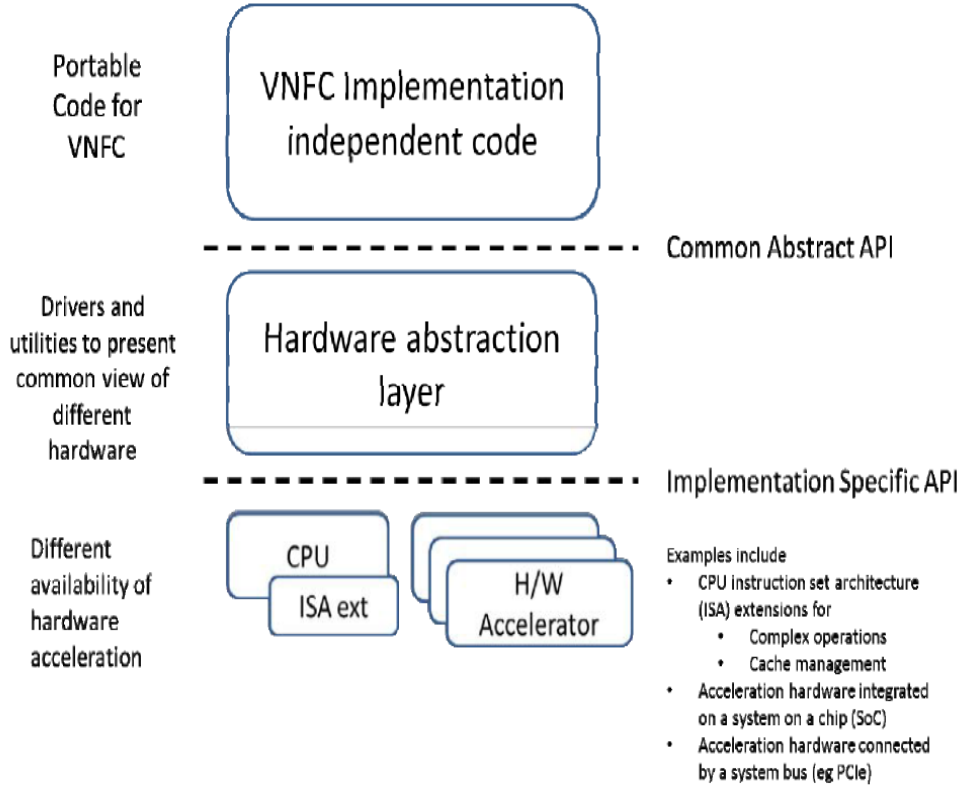
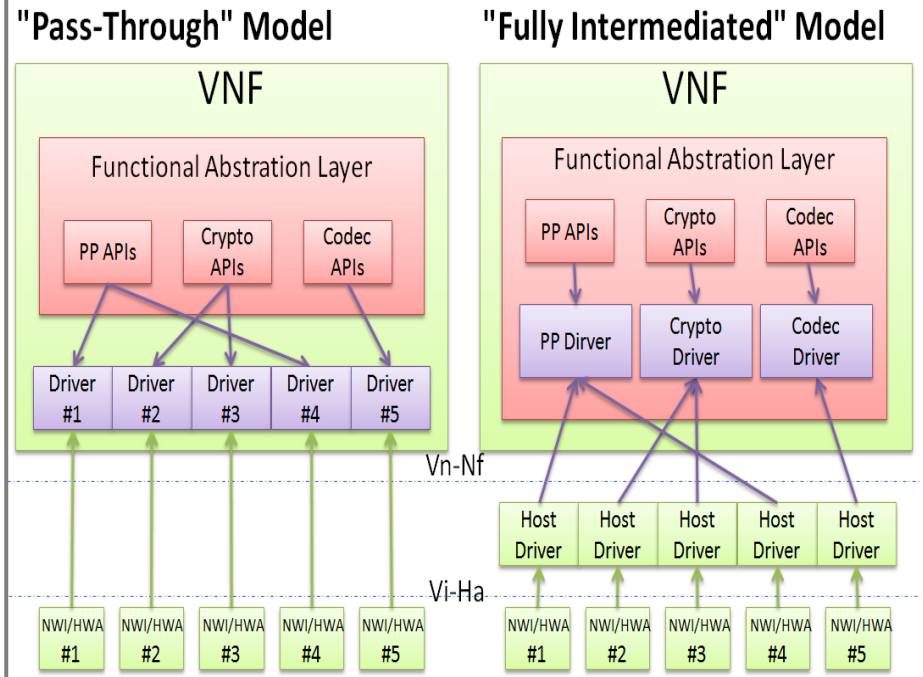
Scenarios of Hardware Acceleration



Abstract model of Accelerators (NFV)





Note: the original figure forwarded from ETSI GS NFV-INF 003 V1.1.1 (2014-12)

https://wiki.opnfv.org/dpacc/dpacc_project_proposal

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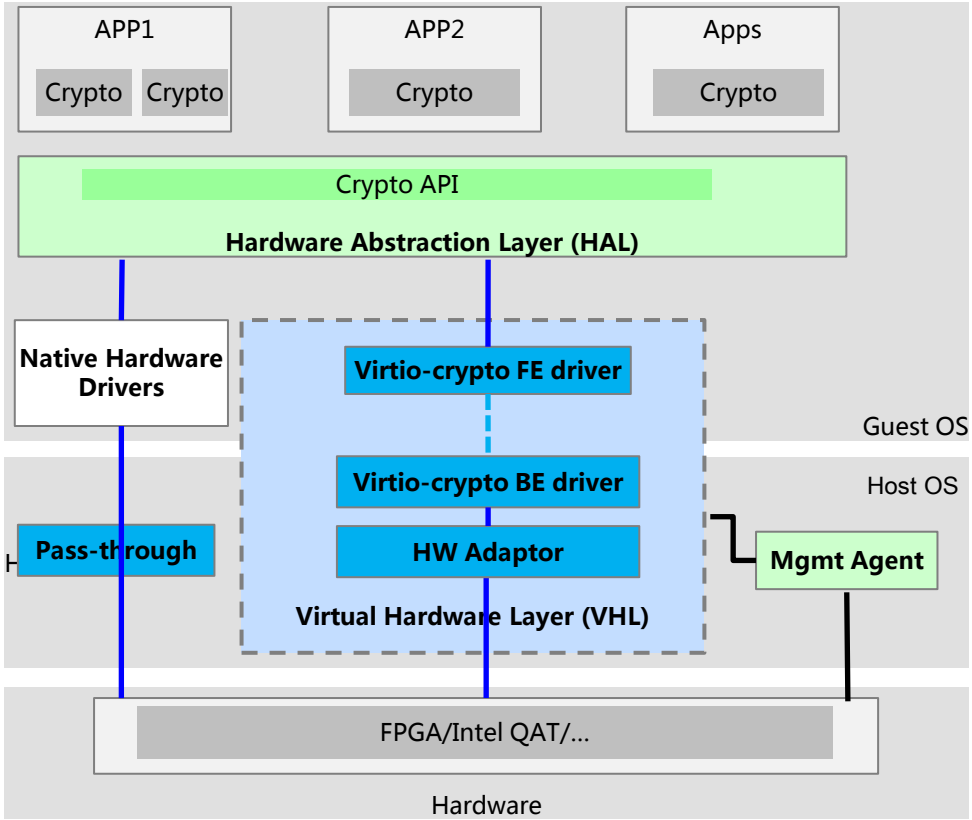


1. **HAL**

   Provide acceleration APIs and runtimes

2. **VHL**

   Provide virtual accelerators:

   1) virito-crypto FE driver

   2) virtio-crypto BE driver

   3) HW Adaptor : support different crypto accelerators

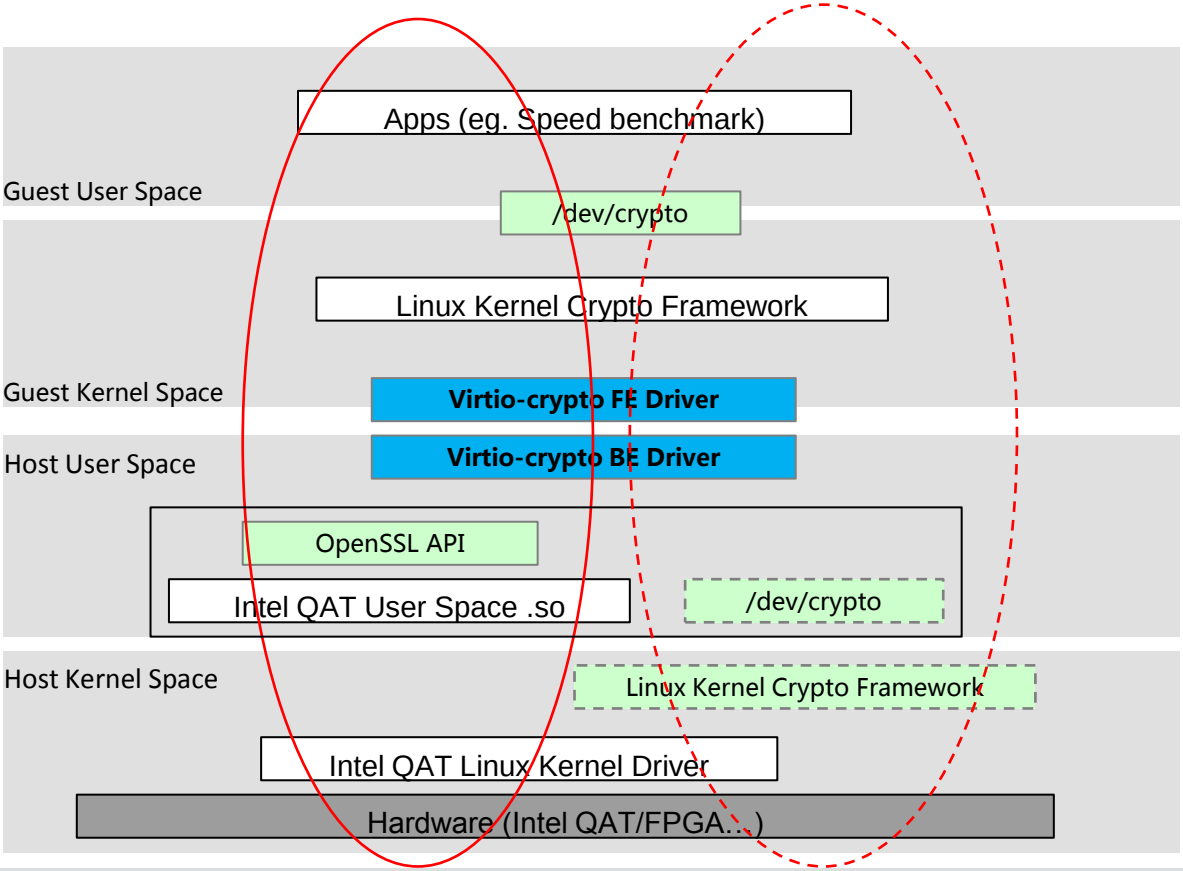
3. **Pass-through**

   Accelerator pass-through

4. **Mgmt Agent**

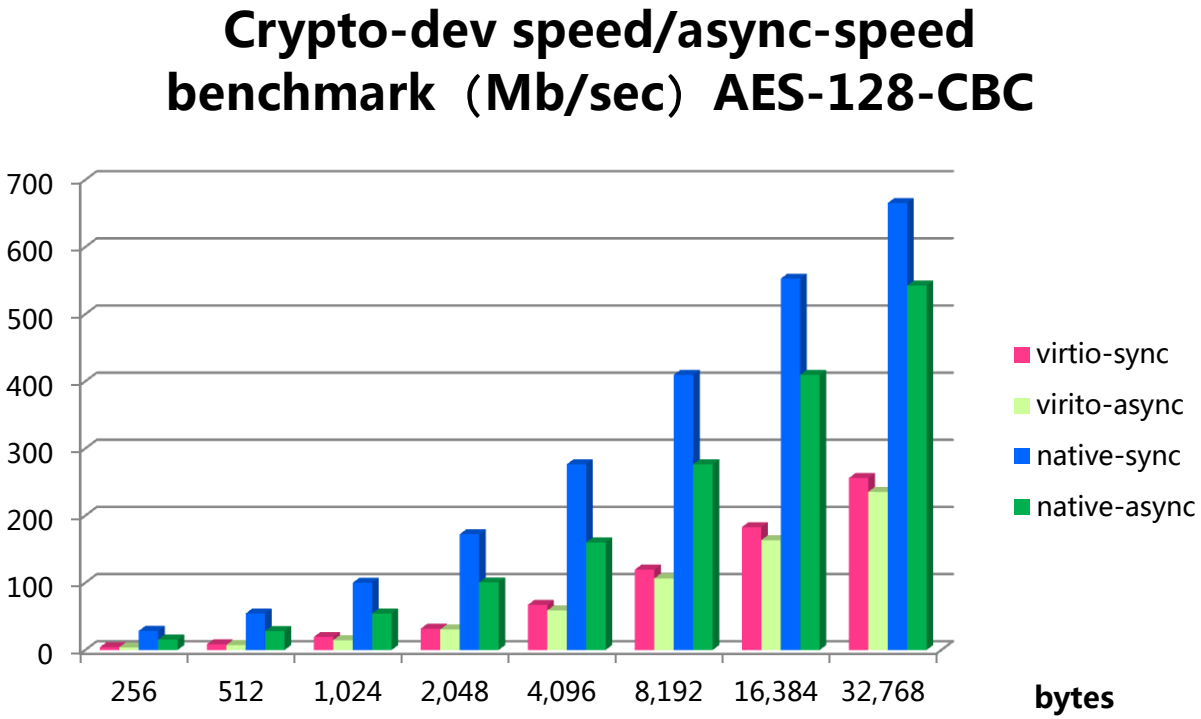
   Accelerator management

Flow of Prototype



Note: The left ellipse is today's demo scheme

Performance



- **Hardware**
  1) Intel(R) Xeon(R) CPU E5-2620 v3 @ 2.40GHz
  2) Intel QAT Coleto Creek PCIe DH895xCC SKU2
- **Software**
  Guest: Suse11.3 with 8 GB memory, 8vcpu
  Host: KVM 3.12, QEMU 2.4-rc3

TODO:

1. Performance optimization: virtio-crypto-dataplane, batch processing, etc.
2. Other crypto APIs support
3. Virtio-crypto upstream