Previous Life, This Life and the Future of HDSLB

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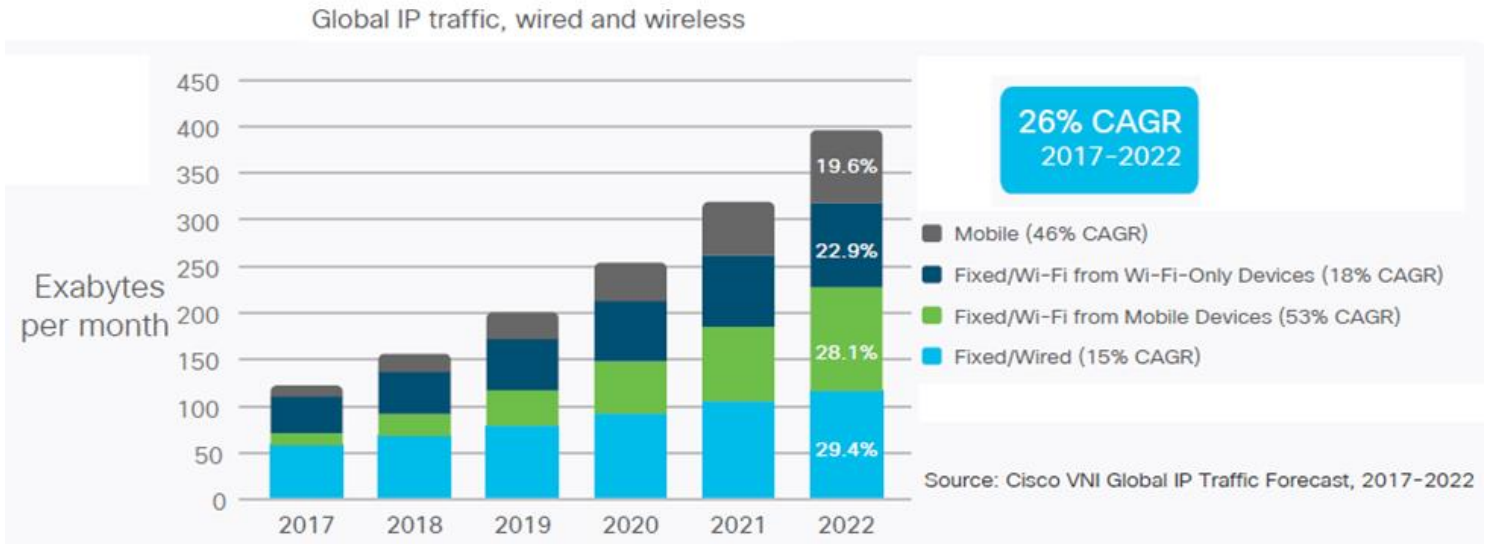
Agenda

- Why
- Market Status
- Elephant Flow Distribution Demo
- WireGuard and IPv6 Routing
- Long-term Roadmap
- Key Takeaways

Why

Welcome To The 5G/Cloud/IoT/Bigdata Era

Dramatically increased Network traffic/connections/throughput



Picture from: Cisco Annual Internet Report (2018–2023) White Paper

Huge Network Throughput

Traffic amount increasing exponentially

Large Connections

Large connection number due to IoT devices and rich applications

100G Migration

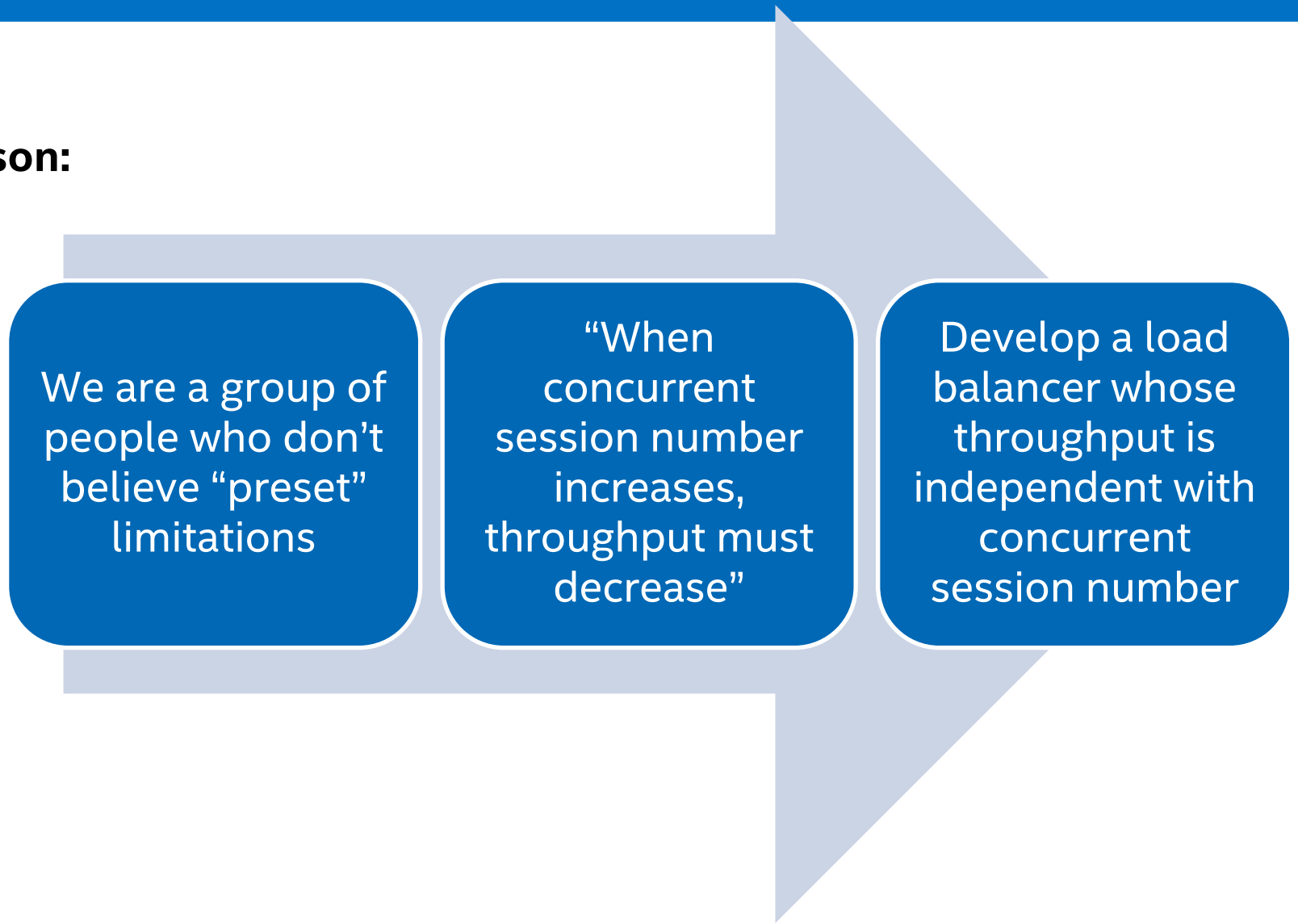
100Gbps becomes mainstream network interface standards

Elephant Flow

Video/storage applications generate huge throughput long-live connections

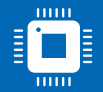
Why

The real reason:



Highlights

HDSLB Addressing These Challenges With Industry Leading Performance



Intel Processors and NIC Packaged Solution

Fully optimized

Handle 100M Level Concurrent Conn

Address the business challenges for large concurrent conns

Handle 150Mpps Level Throughput

Address the business challenge of huge traffic

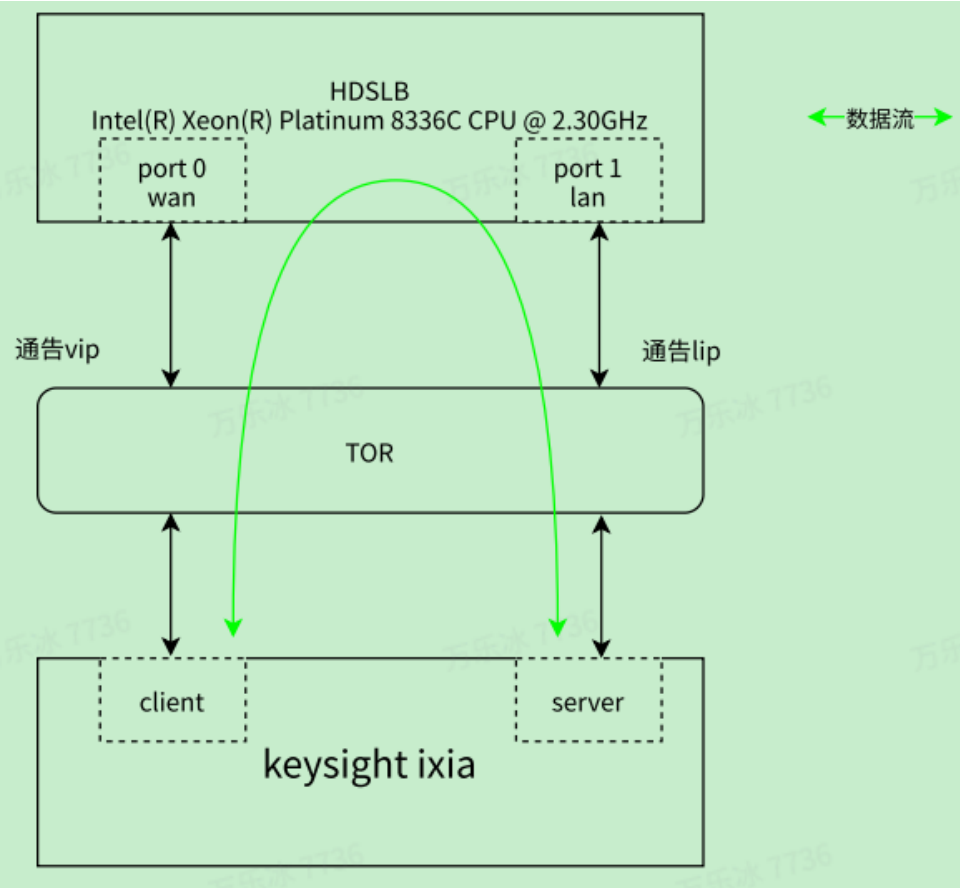
Handle 10Mpps Level Elephant Flow

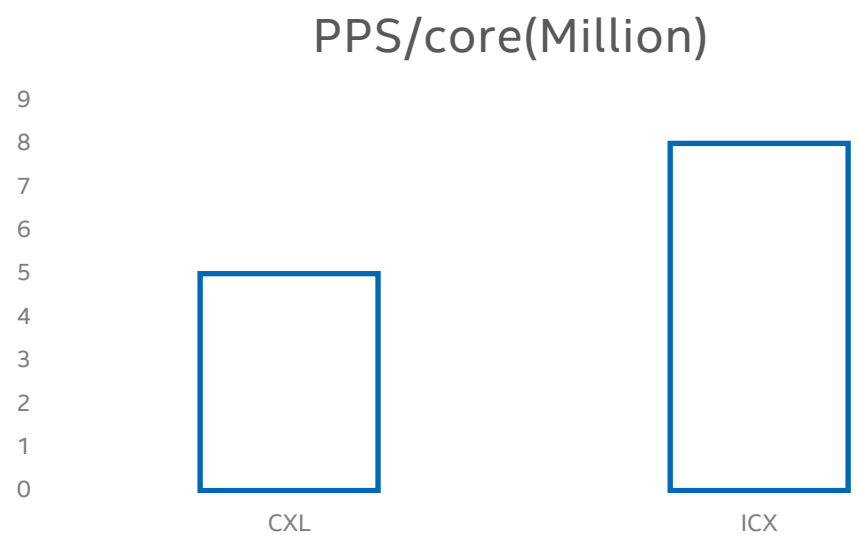
Address the business challenge of Elephant Flow

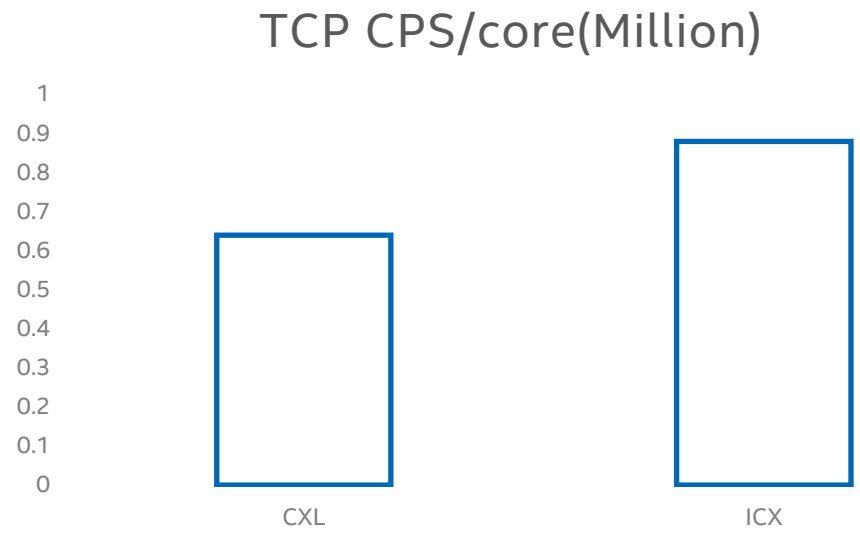
Throughput performance is independent with concurrent session numbers

Why

CPU1	Intel®Xeon®Platinum 8336C CPU @2.30GHz
CPU2	Intel®Xeon®Platinum 8260 CPU @2.40GHz
NIC	Intel E810 x2
OS	Debian 9.13 and Kernel 5.4.56.bsk.2-amd64
HDSLB	0.1-1+bugfixes
DPDK	20.08







Market Status

Go Global

PRC

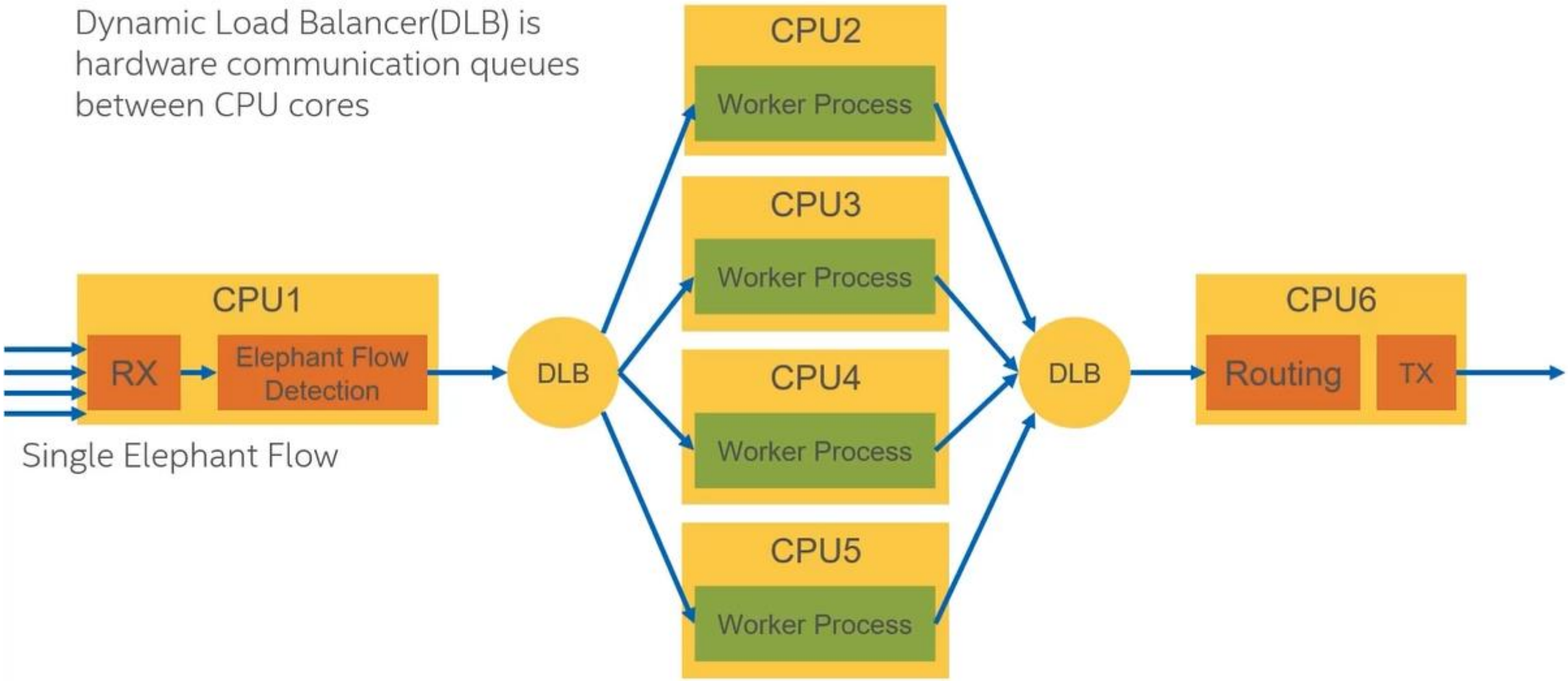
- Cloud Service Provider(CSP)
  - 4 Tier1 Public Cloud Customers
  - ~10 Next Wave CSP Customers
- CoSP
  - 2 CoSP Customers
- Equipment Manufactures
  - Load Balancer vendors
  - Network Security vendors

Global

- One Global Leading Network Security Vendor
- One Global Leading Virtualization Company

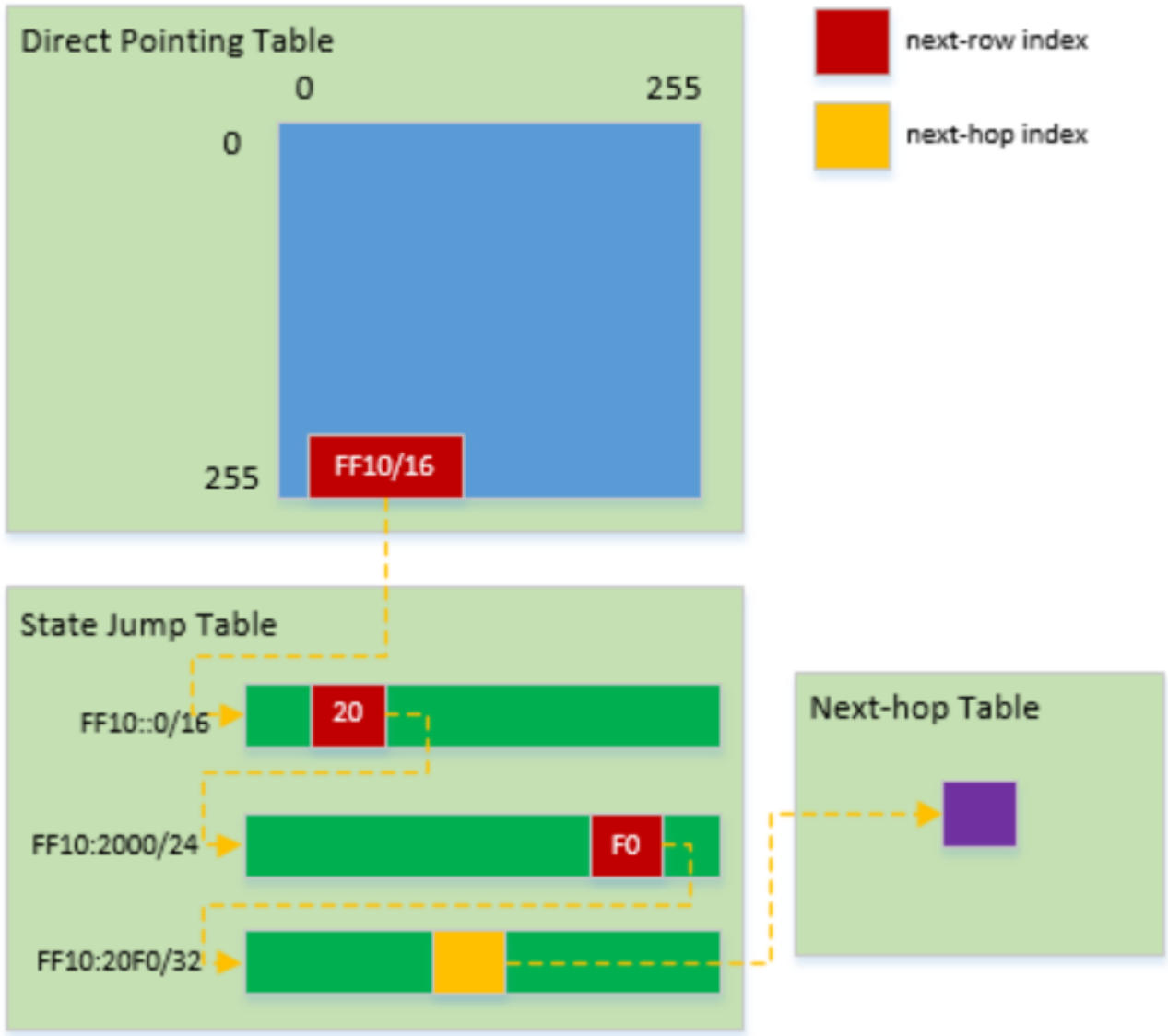
This Life of HDSLB

Elephant Flow Distribution with DLB



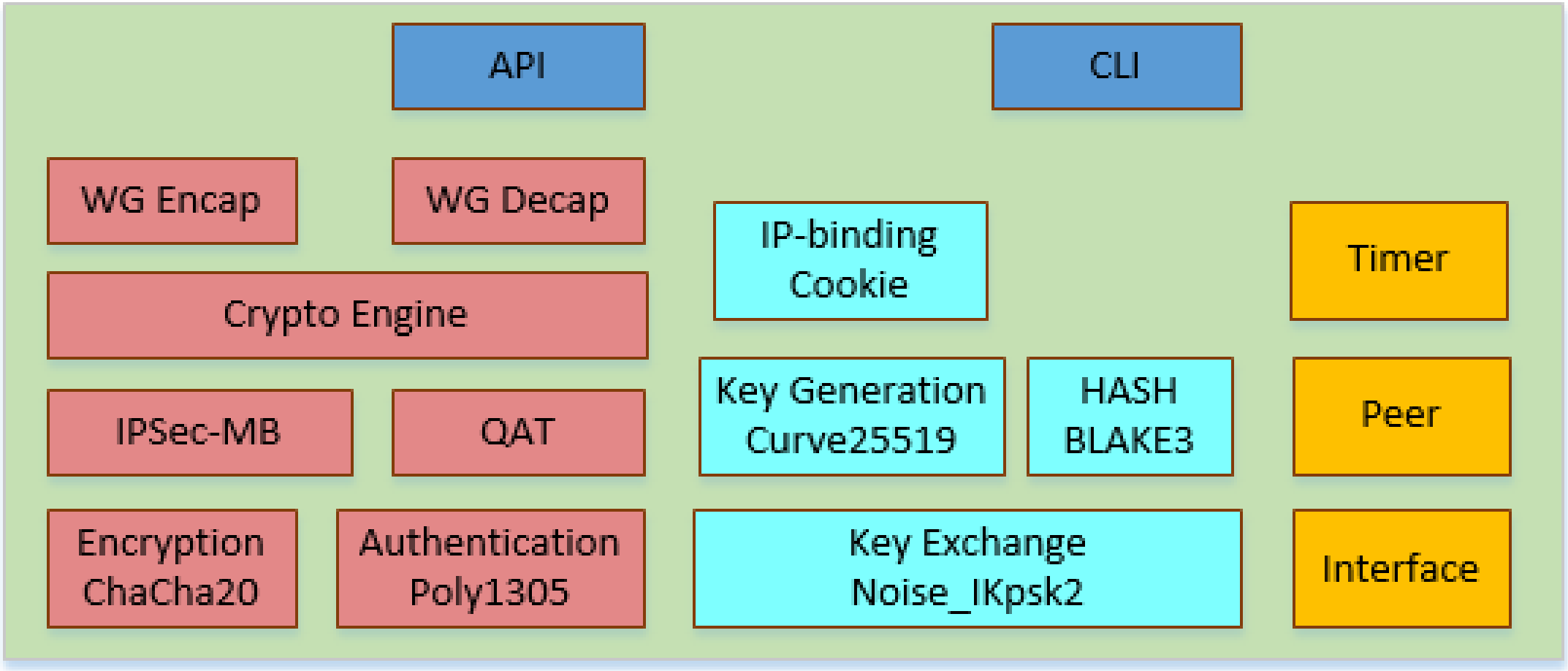
Network Elephant Flow Handling By Dynamic Load Balancer(DLB)

IPv6 Routing Optimization



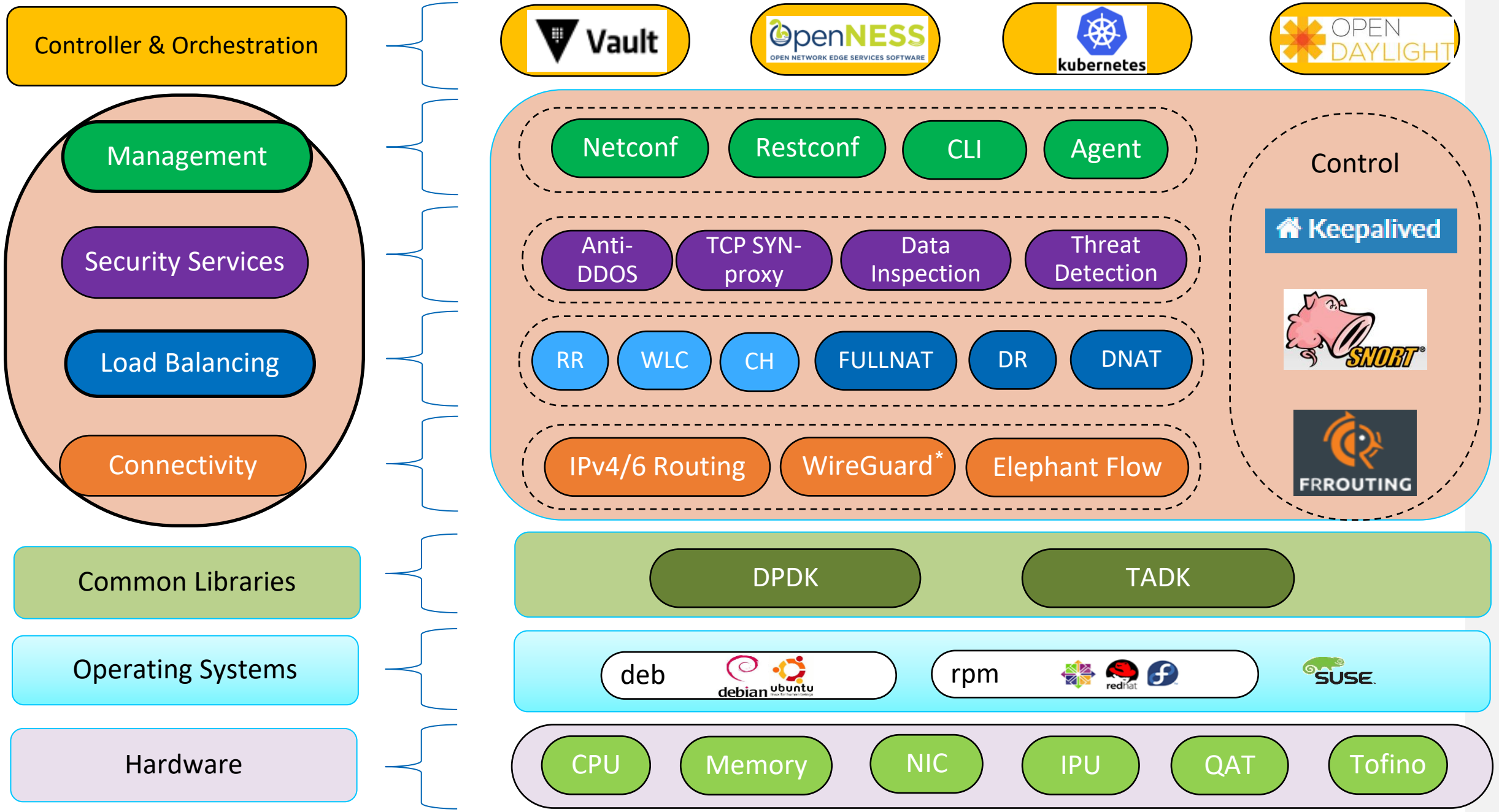
- A new algorithm on AVX512.
- Compared to DPDK LPM6 lib:
  - 3x perf gain on lookup
  - 20x perf gain on adding

WireGuard Implementation and Optimization

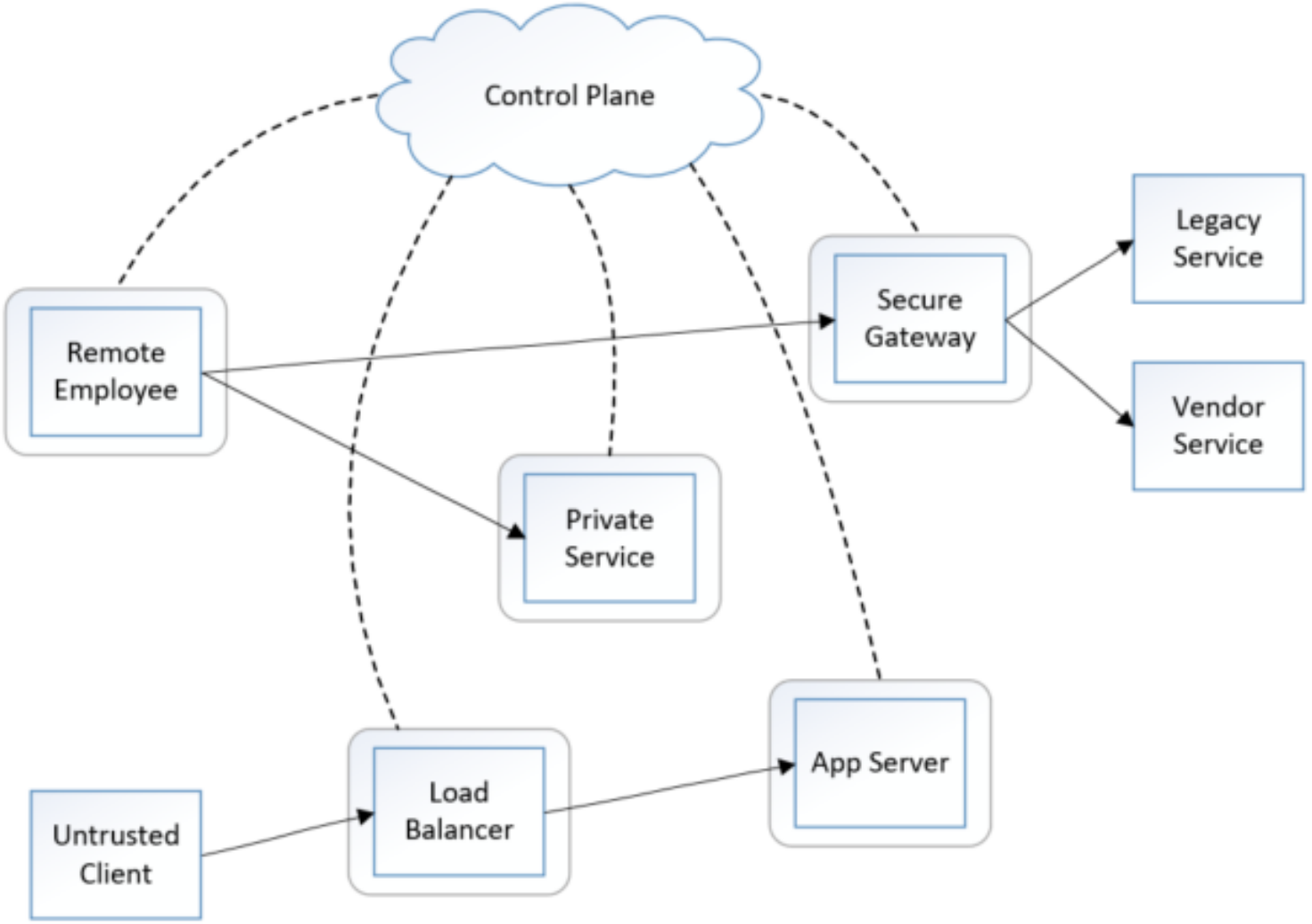


- About 10 Gbps per Core with 1400 Bytes packets.

The Future of HDSLB



Integration with Zero Trust Networking



Key Takeaways

- HDSLB is a **High Density** and **Scalable** Cloud Gateway running on x86 servers.
- Many global customers have been **adopting** HDSLB.
- Leverages **DLB** to accelerate Elephant Flow Distribution.
- Leverages IPSec-MB and QAT to accelerate **WireGuard**.
- Integration with **Zero Trust Networking** is the next step.
- Keep moving for a **faster** and **better** Load Balancer.

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