

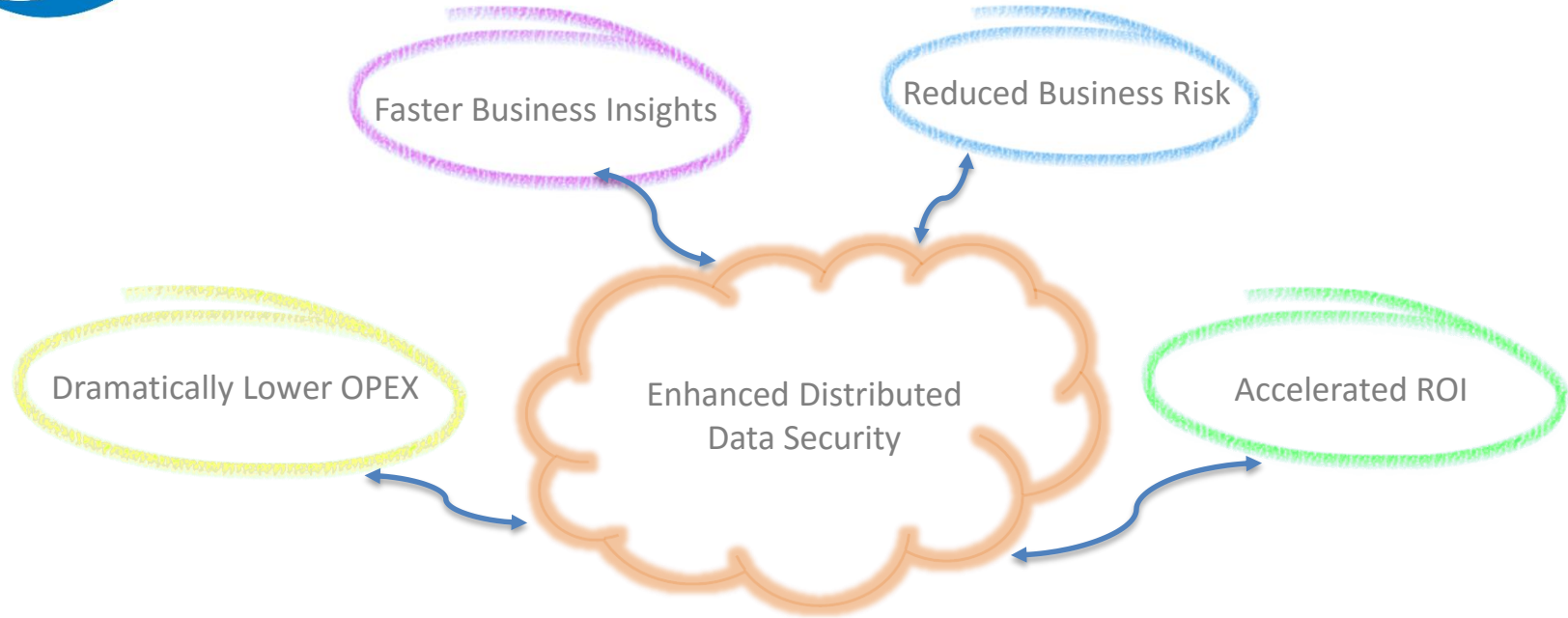


# Introducing the Flareon Ultra SFN8500 Adapter Family

June 13<sup>th</sup>, 2016

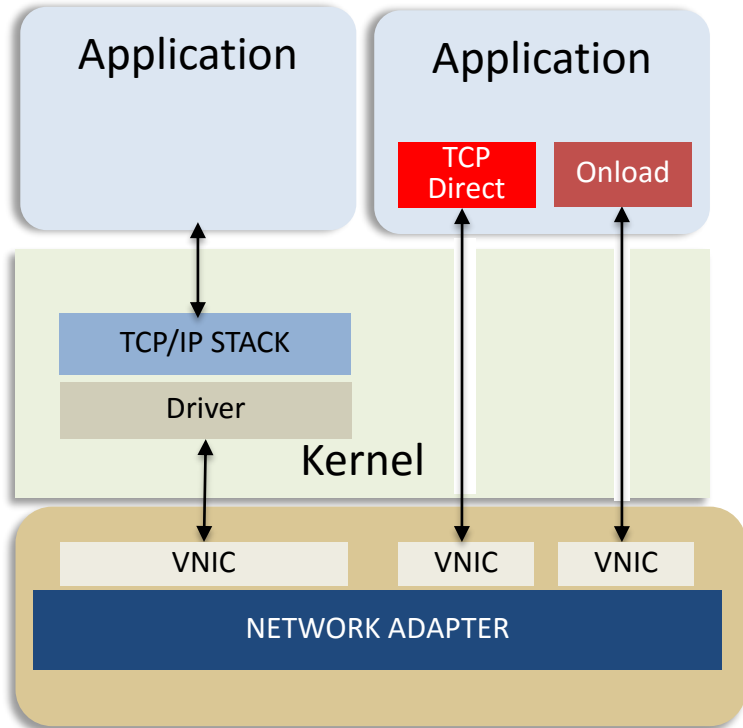
Davor Frank

Senior Solutions Architect



We provide application *visibility*, *acceleration* and *security*, all on *a single* platform

# Onload



- Onload accelerates:
  - Latency sensitive applications **AND**
  - Highly threaded and horizontally scaled applications
    - TCP & UDP (unicast & multicast)
    - Pipes
    - TCP and UDP loopback
    - Select(), poll() and epoll()
    - White/blacklisting/DDOS protection
    - Remote monitoring
    - **New** TCPDirect API
- Onload is compatible:
  - Standard BSD sockets API
  - No changes to applications needed
  - Many languages (Java) / Middleware
  - Standard protocols on the network
- Onload supports:
  - Precision timestamps
  - Bonding (active-back and LACP) (teamd)
  - VLANs
  - SRIOV acceleration (Guest VM / Container)
  - **Insane** FPGA offload

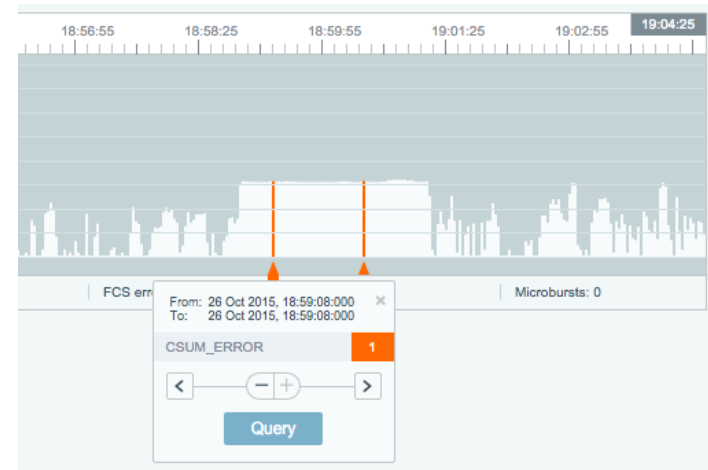
# SFA7942Q Application Onload Engine



- Onload TCP/UDP
  - Insane 240ns tick to trade with Solarflare ANTS\*
- Capture
  - 8GB on-board buffering
  - 64 capture channels
  - Header matching & hash-based spreading
  - Zero-copy capture to disk (pcap format)
  - Line-rate forwarding at 40G
  - Accelerates libpcap, Snort, IDS, IPS, CSS

\* *Not STAC Benchmarks*

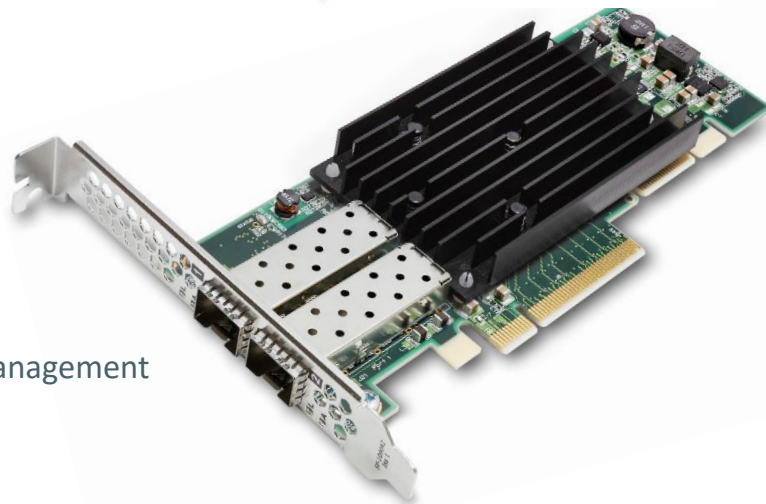
- 2x QSFP+
  - 2x 40GbE
  - 8x 10GbE
- Half length PCIe
- Stratix V A7 FPGA
- 4x 800MHz DDR3
- Stratum 3E TCXO
- Open Source FDK Reference Designs



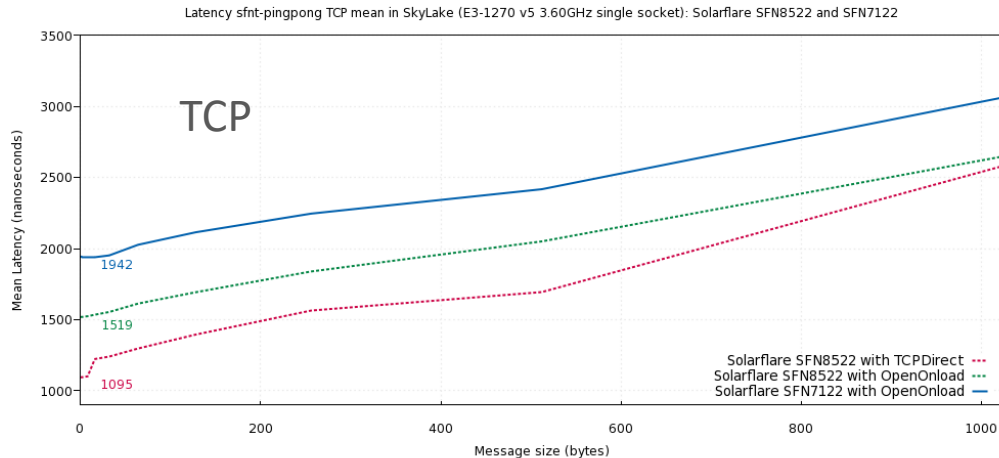
# SFN8500 Highlights

- Next Generation Adapter
  - 10G and 40G, Dual and quad port
    - Fully symmetrical
  - 44% latency reduction
    - < 900ns Ethernet, <1000ns TCP/UDP
  - 3x packet rate increase
    - 2x10G and 1x40G line rate capture
  - 42% bandwidth increase
    - 2x40G full bidirectional, with increased microburst resilie
- Precision time on all adapter SKUs
  - Stable Stratum 3E oscillator
  - Hardware time stamps every frame
  - Time synchronization via PTP and PPS
  - Synchronises host clock and adapter clocks
- Tamper resistant
  - Secure boot from flash, secure debug, secure key management
- Overlay Network Acceleration
  - VXLAN, NVGRE, Geneve, Cloudstack, OVS

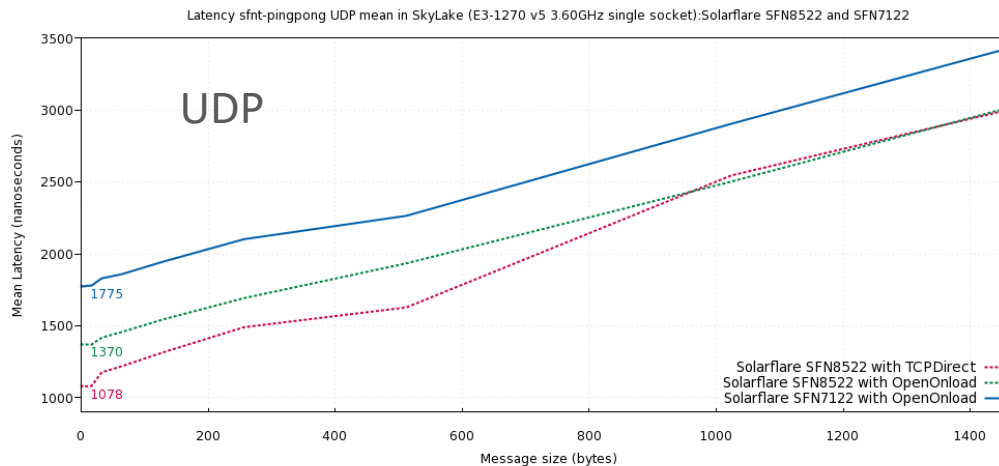
\* *Not STAC Benchmarks*



# Not STAC Benchmarks



44% TCP latency reduction from current 7122 with 8500/TCPDirect



<1000ns UDP / TCP on more exotic (or old!) platforms

# SFN8500 Family Adapters

- Common hardware platform
  - High performance
  - Precision time
  - Security ready
- Optional software license SKUs
- Backwards compatible with SFN7xxx
- SFN8522 & 8542 samples available now

