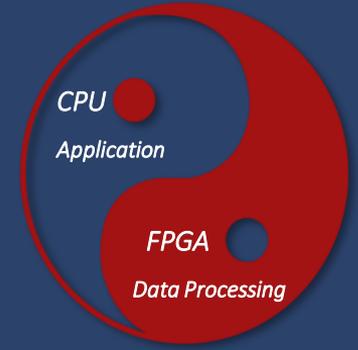


# FPGA Acceleration for Cloud Networking and Security

David Levi  
CEO



ENET  
FPGA

The text 'ENET FPGA' is displayed in white on a blue background that features a circuit board pattern and binary code.

# Cloud is expanding

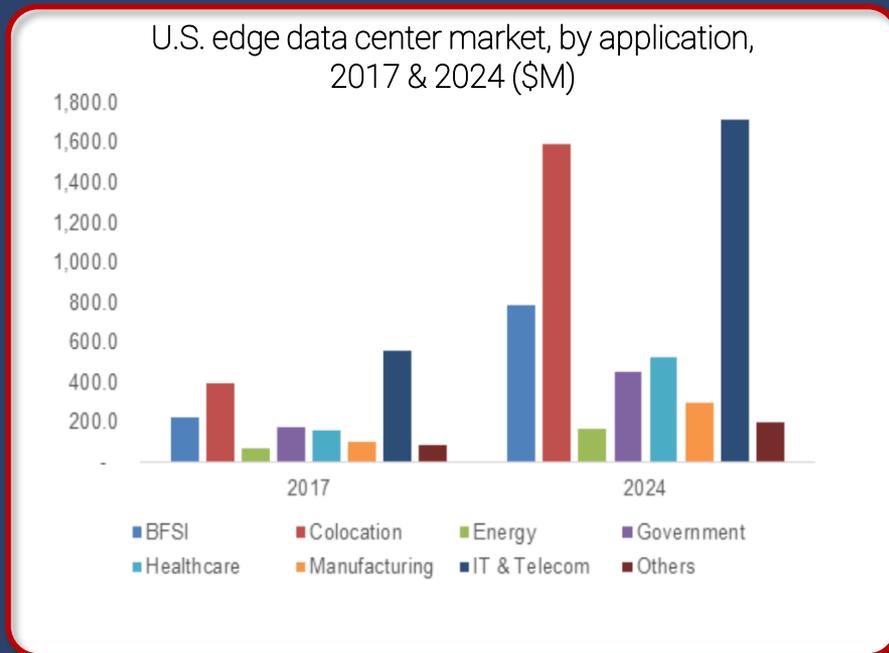
- Worldwide public cloud revenue to reach \$206.2B in 2019, **17.3% growth** from 2018 Gartner, Sep 2018
- Rapid increase in the amount of data generated, 201 EB/month in 2019, 26% CAGR 2017-2022 Cisco VNI Feb 2019
  - Big Data BI, Analytics, AI/ML
  - Mobile → 5G
  - Video
  - IoT



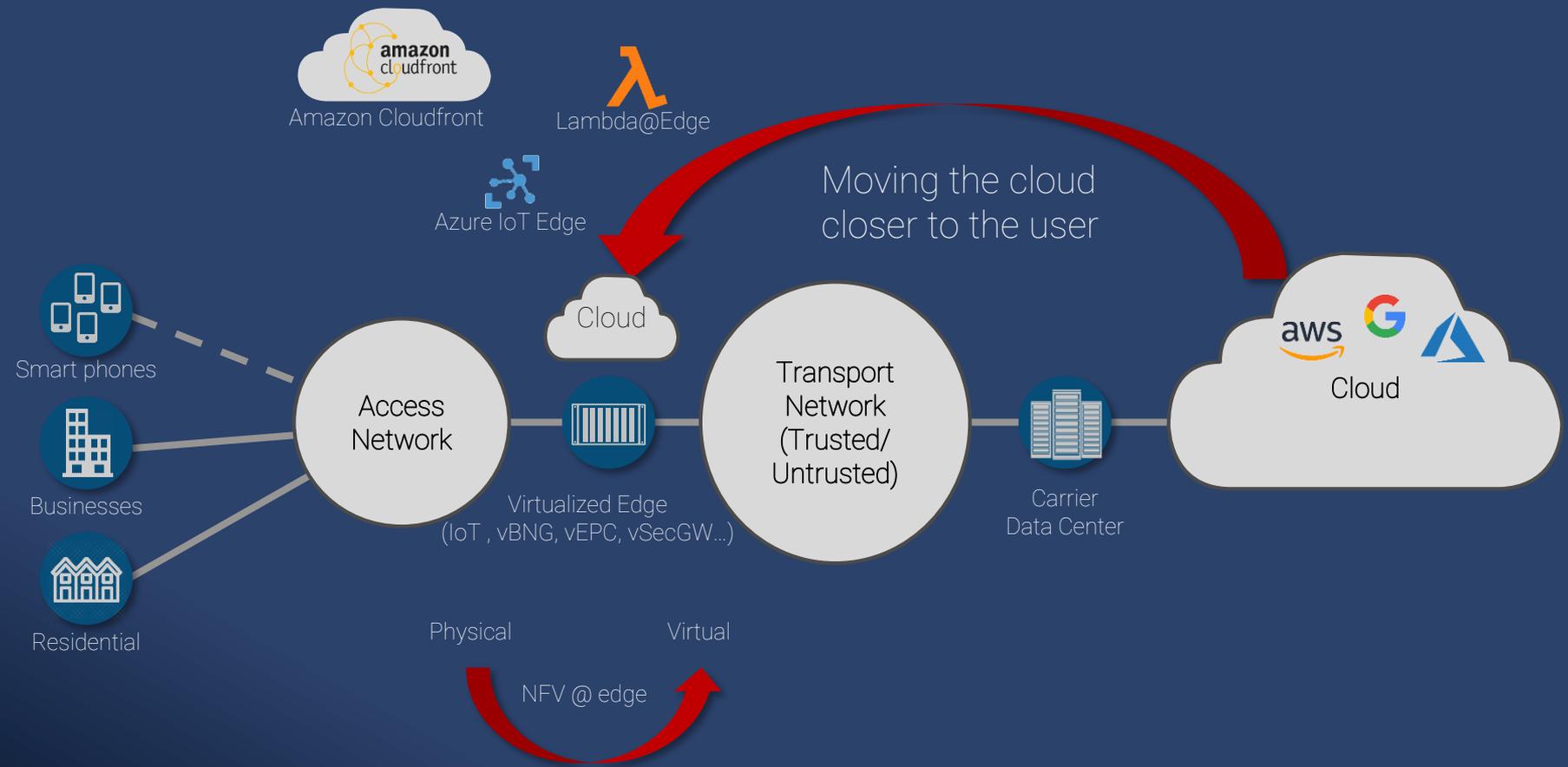
# Edge data center market to surpass \$13B by 2024

Global Market Insights, Nov. 2018

- Main applications
  - IT & Telecom
  - Colocation
- Motivations
  - Improve user experience (latency, autonomy)
  - Higher efficiency

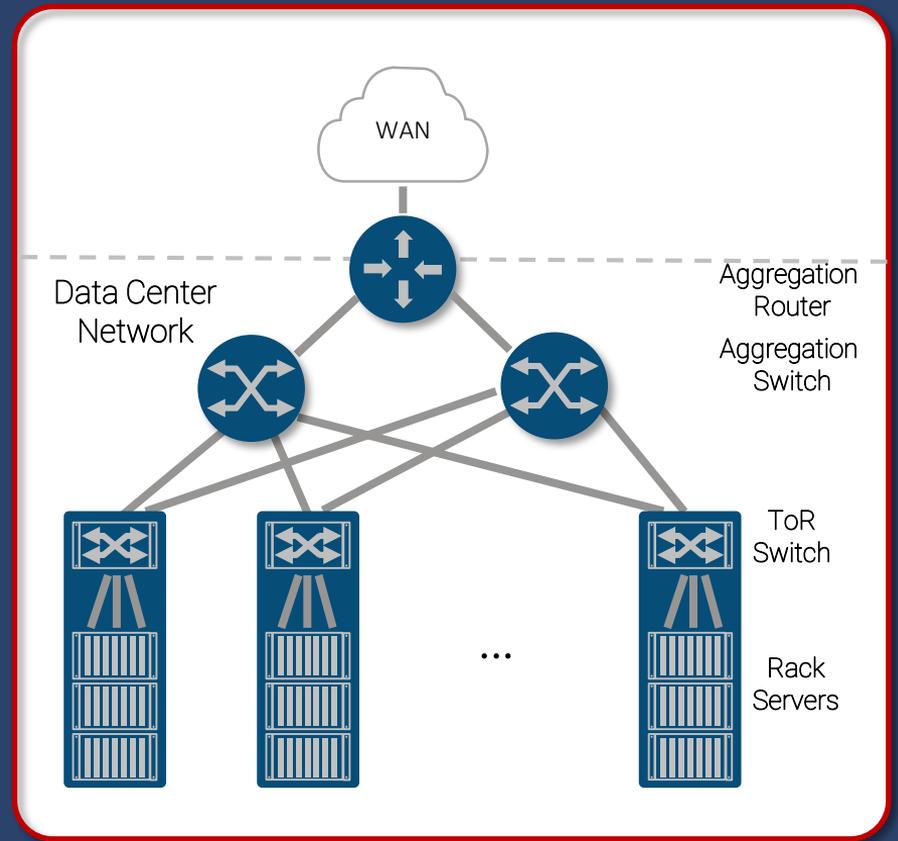


# Both cloud and telecom race to the Edge



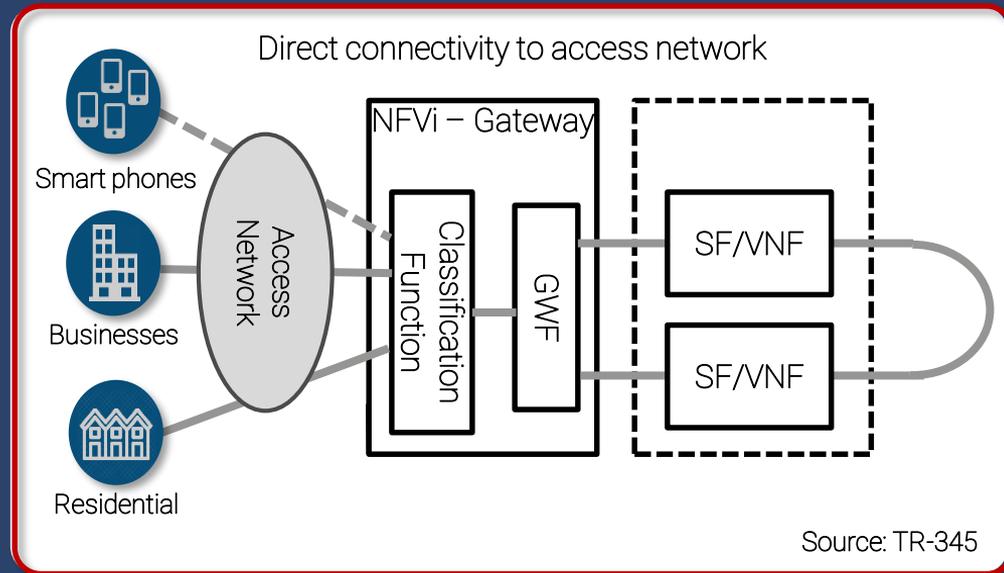
# Cloud data center network environment

- Common networking cloud appliances
  - ToR Switches
  - Load Balancing
  - BGP Routers (open stack)
  - Provider Router
  
- Cloud Edge virtualization
  - Adds the need for an NFVI Gateway



# NFVI Gateway serving edge network functions

- Edge networking functions
  - Classification
  - Load balancing
  - Offloading of access protocols
  - IoT aggregation
  - Per sub SLA and QoS
  - Monitoring



Source: TR-345

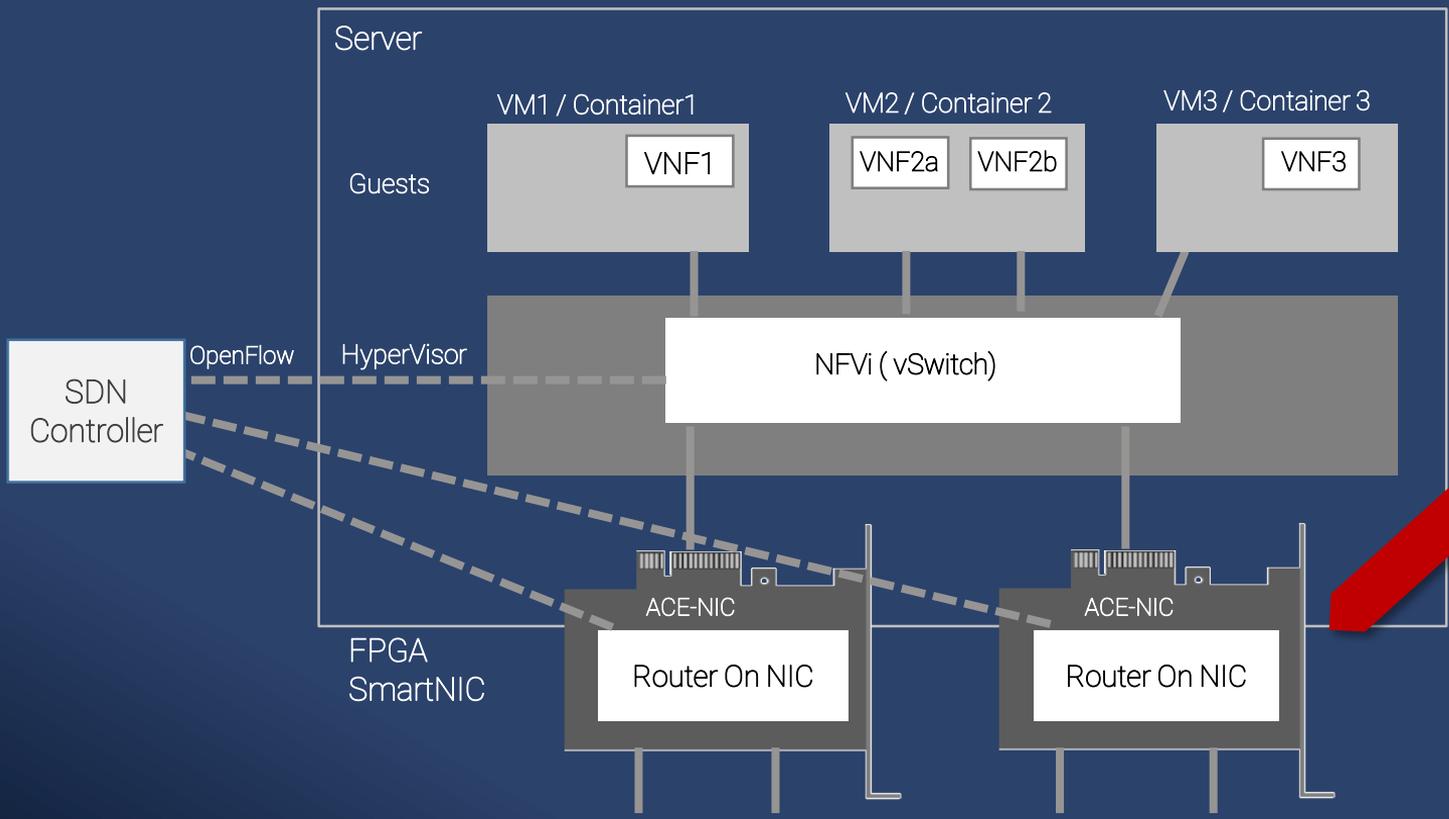
# Edge comes with unique challenges



Limited power  
Limited space

Accelerating traffic, video,  
IoT, Big Data, especially as  
5G approaches

# ENET Gateway Router on a NIC

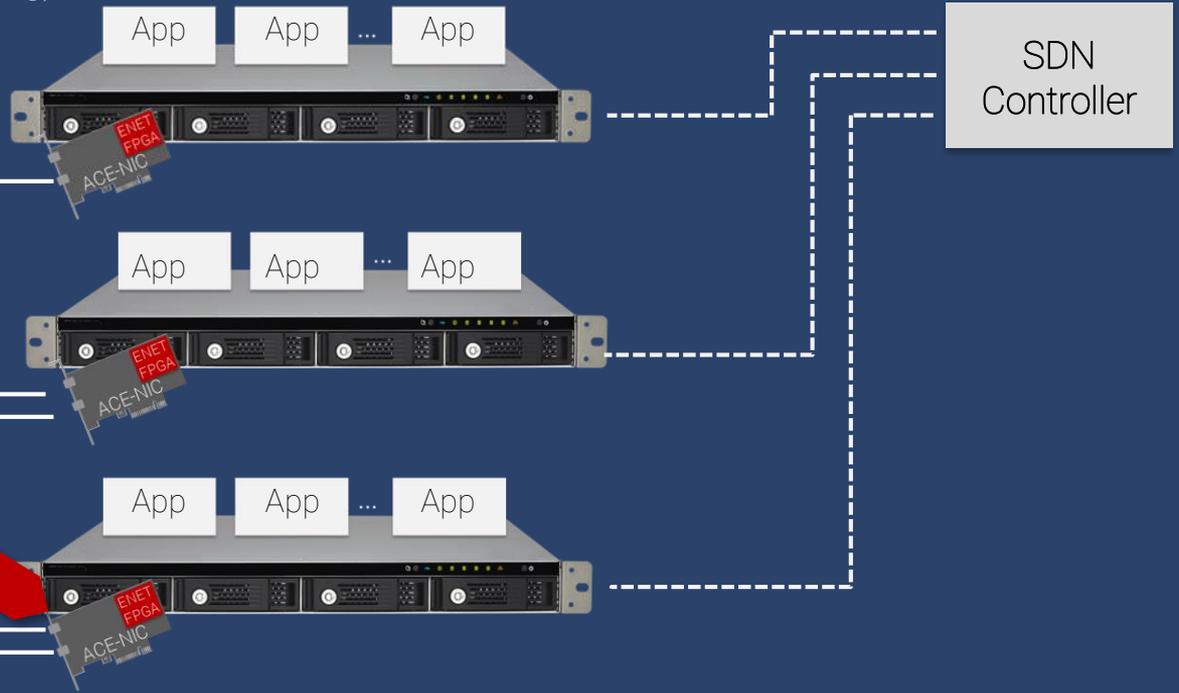


- Per ACE-NIC:
- Switch/Router
  - NFVI GW
  - Classification/ Load balancing
  - SLA
  - Monitoring

# ENET Router on NIC

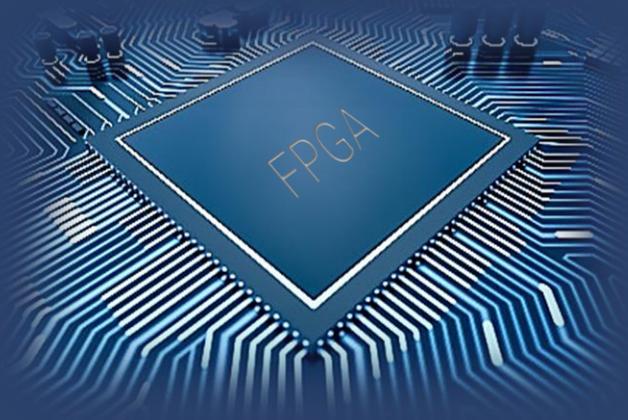
Data Traffic  
(server cascading)

Control Traffic



- Per ACE-NIC:
- Switch/Router
  - NFVI GW
  - Classification/ Load balancing
  - SLA
  - Monitoring

# FPGA – COTS Data Path Acceleration Platform



- ✓ Fully *programmable* agile network
- ✓ *Open*: commercial-off-the-shelf (COTS)
- ✓ Data path acceleration
- ✓ Fits hyperscale and edge data centers
- ✓ Inline with Tier 1 cloud providers : Amazon, Microsoft ,Intel, and other..

# All-programmable ACE-NICs

- Carrier Ethernet Switch/Router
- NFVi Gateway
- Security Gateway / VPN / IPSec
- FPGA-based VNF acceleration
  - OVS offload, vEPC, vRouter, vBRAS/vBNG, PM probe appliance, and more
- 10G, 205G, 40G, 100G ports
- Customized to any networking security functions

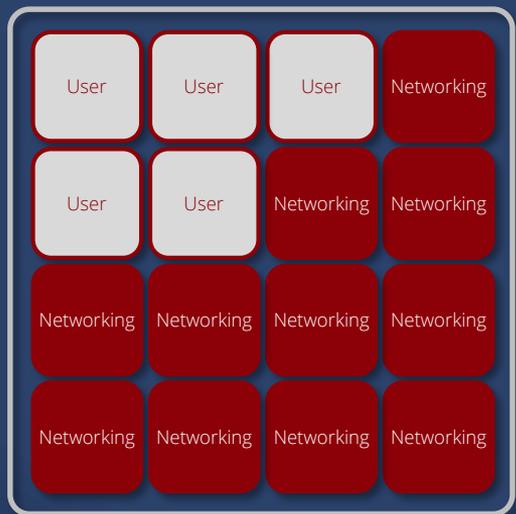


# About Ethernity Networks

- Leading provider of networking and security solutions on FPGA
- SoCs, SmartNICs, network appliances
- Over 500K systems already deployed, connecting over 100M end users
- Unique patented technology
- Founded in 2004, public, traded on the LSE
- Global, HQ in Israel

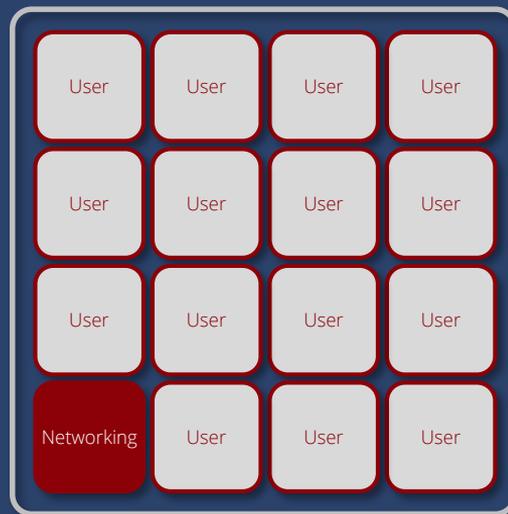


# Stop Burning CPU Cores!



*CPU*

**ETHERNITY**  
NETWORKS



*CPU*

# Thank You!

*We look forward to discussing how we can help your business*

David Levi, CEO  
Vidi.Levi@Ethernitynet.com

ENET  
FPGA