ENEA

SOLUTION BRIEF

Life at the Edge Made Easy with Enea and Cavium

Flexibility, Performance and Power Efficiency on ARM-based SoCs

Service providers are turning to virtualization to overcome integration, management and service quality challenges in their networks, and to achieve price and performance optimizations in a highly competitive marketplace. SDN and NFV bring a promise of new and smarter functionality that service providers are eager to embrace, but the creation of virtualized environments is complex, requiring infrastructure and software to be workload-optimized and to meet high industry requirements in terms of deployment and performance.

CAVIUM

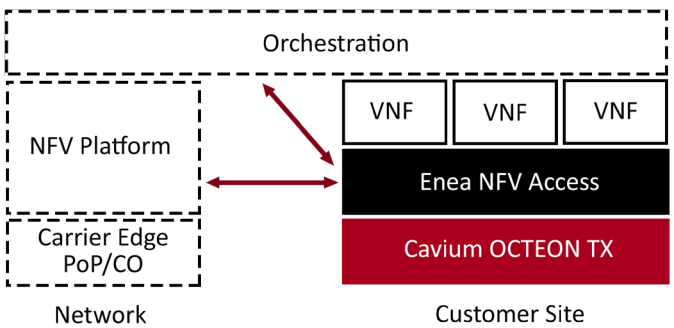
High Performance and Exceptional Power Efficiency

Use cases like virtual Customer Premises Equipment (vCPE), and the evolution thereof, universal Customer Premises Equipment (uCPE) simplify customer site deployments by replacing dedicated appliances with Virtual Network Functions (VNFs) running on a single, universal platform. The foundation is a commercial off-the-shelf (COTS) server hosting open source and commercial software, extending cloud-centric technologies all the way to the access part of the telco network.

By using uCPE, service providers offer their enterprise customers on-demand deployment with the flexibility of choosing from a range of VNFs and VNF vendors. In addition to the agile and flexible deployment benefits, the uCPE software platform provides a consistent management interface regardless of the selected network functions, and service-function-chaining of the subscribed VNFs for individual enterprise subscribers.

uCPE provides on-demand zero touch deployment of multiple network functions (instead of each one being implemented as its own purpose built appliance), plus a virtualization software platform in a cost effective, single-box COTS systems.

The combination of Enea and Cavium technologies ensures a streamlined solution that optimizes networking performance and provides minimal footprint for both the platform and VNFs, resulting in very high compute density. It also provides a foundation for uCPE agility and innovation, reducing costs and computing complexity at the network edge.



An Alliance for Better Flexibility and Innovation

For highly optimized uCPE processing solutions, Cavium's highly integrated OCTEON TX ARMv8 SoC family of processors brings outstanding performance processing and power efficiency, and is available as 2 to 24 core scalable offerings.

The lightweight software virtualization platform Enea® NFV Access can be integrated into existing infrastructure without a full OpenStack deployment. Enea NFV Access runs on as little as two cores while retaining throughput and performance levels. Support for container virtualization increases the VNF density and minimizes total system footprint. In addition, Enea NFV Access enables a mix of containers and virtual machines on the same platform, providing flexibility and a smooth migration from VMs to Containers.

Purpose built to overcome common uCPE use case challenges, Enea NFV Access contributes to CapEx and OpEx savings, and offers proven solutions for standards-based service orchestration and model-based network function management systems.

Enea's software includes virtualization through KVM and Docker, optimized vSwitch, FCAPS management, VNF lifecycle management, Service Function Chaining (SFC), and an optimized data plane enabling a 10G line rate from VMs and Containers. It uses open and standard interfaces, making it completely hardware agnostic and fully portable, supporting interoperability for leading VNFs.

VNF Lifecycle Management and Service Function Chaining can be carried out over a variety of northbound interfaces (NETCONF, REST, OpenStack and Docker) that either interface orchestration directly, or interface a control node in a central office or point-of-presence (PoP). Including a variety of northbound interfaces, Enea's NFV software in combination with Cavium OCTEON TX ARMv8 SoC based uCPE systems easily fits into existing networks and orchestration solutions, limiting the cost, complexity and performance risks usually associated with virtualizing network functions at the edge.

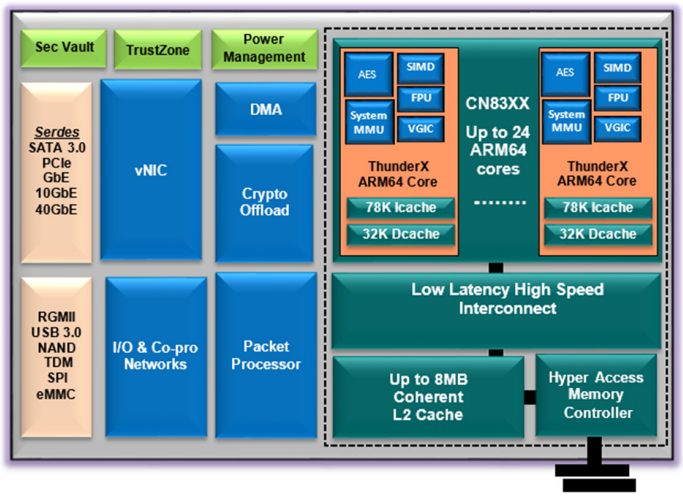


Figure 1. The Cavium OCTEON TX ARMv8 SoC family.

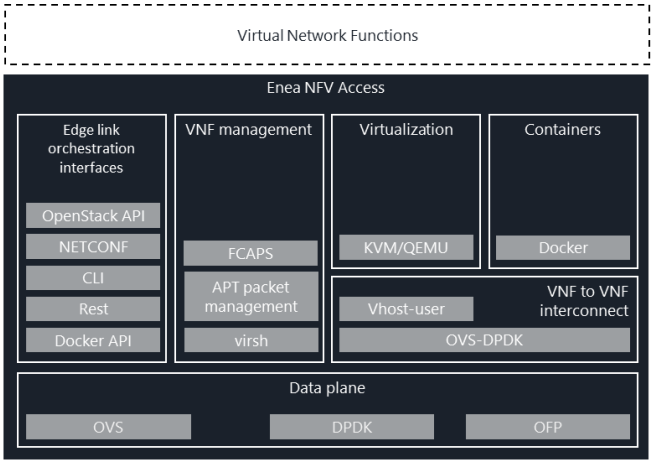


Figure 2. The Enea NFV Access software platform.

- Scales from 1 to 96 cores, 800MHz to 192GHz
- Integrated 40/10/1GbE, PCI-e v3, SATA 3.0
- Spans operating systems, tool chains, Hypervisors from Datacenters, Cloud down to CPE
- Server Grade Hypervisor & Container support for Virtualization
- 400Mbps to 200Gbps of security, packet throughput
- 1Gbps to 40Gbps of compression
- vNIC for multiple networking SW paradigms
- OCTEON model delivers 50Mpps

- Minimal footprint: Does not include OpenStack in standard setup.
- High networking performance: 10Gb throughput
- Container and VM support
- Fast boot: Boot speed optimization improves availability
- Multiple orchestration interfaces: VNF lifecycle management and service function chaining from orchestrator or central office/point-of-presence control node VIM
- Device management framework supporting FCAPS functionality in the platform
- Zero lock-in: Open APIs and standards for portability and whitebox deployment

ENEA

Enea develops the software foundation for the connected society with a special emphasis on reducing cost and complexity at the network edge. We supply open-source based NFVI software platforms, embedded DPI software, Linux and Real-Time Operating Systems, and professional services. Solution vendors, Systems Integrators, and Service Providers use Enea to create new networking products and services faster, better and at a lower cost. More than 3 billion people around the globe already rely on Enea technologies in their daily lives. For more information: www.enea.com

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