

Minimizing footprint to maximize uCPE value with Enea and Lanner High Throughput, Low Footprint, and Low Latencies on Cost-effective uCPEs

The emergence of lower-cost, high volume white boxes along with standardized software APIs increases supplier choice and reduces risks. In order to maximize profits, CSPs need to use the most cost effective solutions on the customer premise, and increasingly, they are using universal customer premise equipment (uCPE).



Benefits

- ▶ Limits cost and complexity
- ▶ Outstanding processing performance and power efficiency
- ▶ Zero touch provisioning
- ▶ Open source based uCPE software platform
- ▶ Virtualization through KVM and Docker
- ▶ Optimized vSwitch
- ▶ FCAPS management
- ▶ VNF lifecycle management
- ▶ Service Function Chaining (SFC)
- ▶ Optimized data plane
- ▶ Open and standard interfaces
- ▶ Supports interoperability for leading VNFs

High Performance and Exceptional Power Efficiency

uCPE simplifies customer site deployments by replacing dedicated appliances with universal platforms of commercial off-the-shelf (COTS) servers, extending cloud-centric technologies all the way to the access part of the telco network.

Service providers can offer on-demand deployment, and choice 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.

uCPE provides on-demand zero touch deployment of multiple network functions, plus a virtualization software platform in a cost effective, single-box COTS systems.

The combination of Enea and Lanner 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 Agility at the Network Edge

For a highly optimized uCPE processing solution, Lanner's NCA-1510C brings outstanding performance processing and power efficiency, and are available as 2 to 8 core scalable offerings.

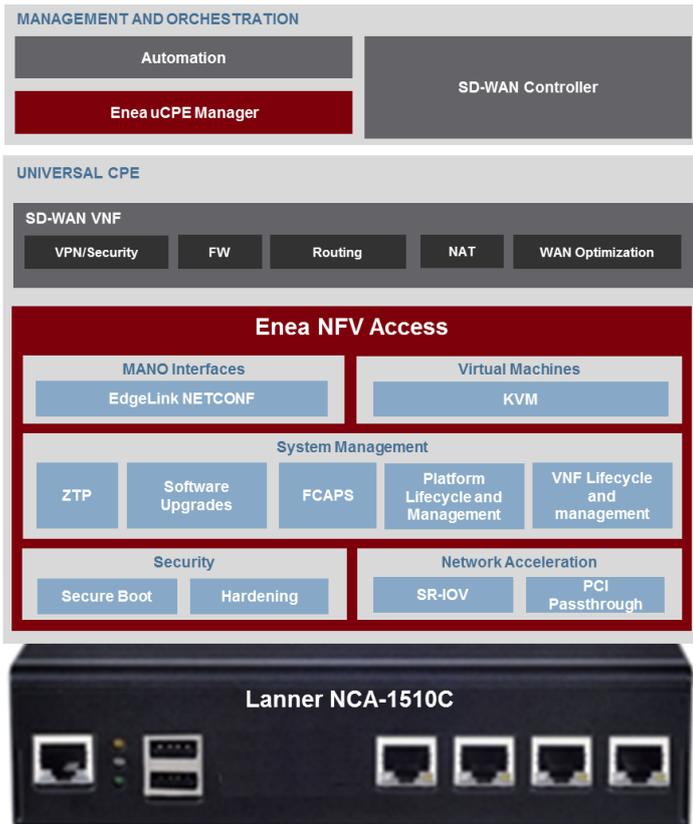
It is powered by an Intel® Atom® C3000 (codenamed "Denverton") CPU, and features robust performance and Intel's QuickAssist Technology, offering cryptographic acceleration and commercial-grade LAN functions in a 231mm x 200mm x 44mm form factor. The NCA-1510 is the ideal fan-less SFF desktop network security appliance for managing edge security at small and medium enterprises.

The lightweight uCPE software virtualization platform Enea® NFV Access can be integrated into existing infrastructure without a full OpenStack deployment. It runs on as little as two cores with retained 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).



Entry-level SD-WAN solution from Enea and Lanner

This is an example of an entry level SD-WAN solution at customer premises, with uCPE/SD-WAN characteristics, and simplified deployment/ease of use with Zero Touch Provisioning (ZTP), automation, lifecycle management, and orchestration secured with NETCONF.

Single multi-function VNF

- VPN/Security
- Light Firewall
- Routing/NAT
- WAN optimization

Resource constraint hardware

- Intel Atom C3858 "Denverton"

Platform footprint

- 2GB RAM + 2 Cores

Networking perf

- 1 Gb/s line rate
- Single VNF and VNF

Enea NFV Access Features

- ▶ Container virtualization for minimal VNF footprint
- ▶ Optimized for high virtual networking throughput and low latency
- ▶ Optimized boot speed for improved resilience and availability
- ▶ Based on industry standard open source components, packaged and ready for deployment
- ▶ Infrastructure management over NETCONF & REST
- ▶ Device management with FCAPS functionality
- ▶ Uniquely designed software platform for customer premise deployment (vCPE)
- ▶ Out-of-the-box support for ARM and x86 COTS whiteboxes

Lanner NCA-1510C Features

- ▶ Intel® Atom™ C3758, C3558 or C3308 CPU (2 ~8 Cores) (Denverton)
- ▶ 4x GbE RJ45 Intel® SoC Integrated MAC and 2x GbE SFP or 2x RJ45 Intel® i210 (By SKU)
- ▶ 1x 204-pin SODIMM, DDR4 2400MHz ECC/Non-ECC DIMM, Max. 16GB
- ▶ Intel® QuickAssist Technology at 10Gbps
- ▶ Intel® AES-NI Support
- ▶ 1x Mini USB Console, 2x USB 3.0, 1x 2.5" HDD/SSD Bay, 1x Onboard EMMC 8GB
- ▶ 1x Mini-PCIe (PCIe), 1x M.2 (USB/SATA) w/ Nano SIM Accessibility

Find out more on the Enea website!



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