Entry-level vCPE/SD-WAN Solutions with Extremely Low Footprint
Reduced Expenditures for Carriers and Enterprises, With Maintained Scalability

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, carriers and enterprises need to use the most cost effective solutions on the customer premise, and increasingly, they are using universal customer premise equipment (uCPE).

ADVANTECH
Enabling an Intelligent Planet

Enea-Advantech Benefits

▸ Enables cost efficient solutions

▸ Optimized and Hardware Accelerated Data Plane

▸ Minimal CPU and memory footprint

▸ Open source based uCPE software platform

▸ NETCONF and Yang based Management

▸ FCAPS

▸ Infrastructure Management

▸ Zero touch provisioning

▸ Lifecycle Management

▸ Virtualization through KVM and Docker

▸ Service Function Chaining (SFC)

▸ Open and standard interfaces

▸ Integrates with any VNF and orchestration

▸ Automation

▸ Hardware platform agnostic

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 Advantech 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, Advantech's FWA-T011 and FWA-1012VC bring outstanding performance processing and power efficiency, and are available as 2 to 8 core scalable offerings.

Designed specifically for uCPE and SD-WAN, both network appliances are powered by processors based on Intel® architecture. The Advantech FWA-T011 is a tiny network appliance based on the 2-core Intel® Celeron® N3350 and 4-core Intel®Pentium® N4200 for entry-level SOHO and small enterprise installations. The higher spec FWA-1012VC is powered by an Intel® Atom™ Processor C3000 System-on-Chip with 2, 4, or 8 cores and Intel® QuickAssist Technology. Both appliances offer rich wired LAN connectivity with WiFi and 4G/LTE options.

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 one core, 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 vCPE and SD-WAN 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 Advantech

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 constrained hardware

- Intel® Celeron® N3350 , Intel Pentium® N4200 or Intel® AtomTM C3000 (previously codenamed Denverton)

Platform footprint

- 2GB RAM + 2 Cores

Networking performance

- 10 Gb/s line rate

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
- Out-of-the-box support Advantech FWA-T011 and FWA-1012VC

Advantech uCPE Features

FWA-1012VC

- Universal Network Appliance with Intel® Atom™ Processor C3000 for vE-CPE and SD-WAN
- Intel® Atom® C3000 System-on-Chip with Intel® QuickAssist Technology at 10Gbps and Intel® AES-NI and VT-d Support
- Supports SR-IOV on all ports by Intel SOC integrated MAC and Intel i350 Ethernet Controller
- Optional dual-SIM, 3G, 4G LTE module and WiFi module
- Optional PoE+ kit to support up to two 25.5W ports

FWA-T011

- 2-core Intel® Celeron® N3350 or 4-core Pentium® N4200
- Ideal for retail, POS and SME installations
- 4 RJ45 GbE ports for LAN or WAN connectivity
- Optional modules for WiFI and 4G/LTE WAN uplink

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