

A close-up photograph of several yellow and white network cables plugged into a server rack. The cables are bundled together and some are crossed over each other. The background is a blurred blue light.

Enea NFV Access

NFV Platform for Customer Premise Deployment

Virtualizing dedicated standalone appliances located at the customer premise benefits both service providers and end users. Traditional CPEs, each performing a single function, are inflexible, difficult to maintain, costly and prohibits innovation and development of services. Virtualization changes all that. NFV provides a flexible platform for service agility and innovation that allows new revenue streams from new services. vCPEs can be configured, monitored and maintained remotely at a scale, lowering OpEx and improving services to customers. Virtualizing can replace the whole stack of expensive dedicated standalone appliances with cost efficient white box equipment, lowering CapEx.

Implementing vCPE functionality on premise has some advantages compared to cloud-based implementations. Performance for critical applications can be preserved when the distance to users is eliminated and less data needs to be moved across the network. Service providers can lower OpEx further by saving on locations and power consumption for the equipment. And end users may want to keep information on premise for security reasons.

ARCHITECTED FOR CUSTOMER PREMISE DEPLOYMENT

Enea NFV Access is a lightweight virtualization software platform uniquely designed for deployment on edge devices at customer premise. It is streamlined for high networking performance and minimal footprints for both platform and VNFs, resulting in very high compute density. Enea NFV Access provides a foundation for vCPE agility and innovation, reducing cost and complexity for computing at the network edge.

HIGHLIGHTS

- Uniquely designed for customer premise deployment
- Based on performance boosted industry standard open source components, packaged and ready for deployment
- Optimized for high virtual networking throughput and low latency
- Optimized boot speed improves resilience and availability
- Minimal software platform footprint without OpenStack
- Container virtualization for minimal VNF footprint
- Multiple VNF management interfaces for adaptability
- Device management with FCAPS functionality
- Out-of-the-box support for ARM and x86

KEY COMPONENTS

Enea NFV Access is built on highly optimized open source and value-adding components that provides standard interfaces but with boosted performance.

- *Linux* – carrier-grade Linux distribution providing the security, performance and availability required for networking and telecom
- *KVM* – KVM provides virtualization with virtual machines
- *Docker* – Docker provides lightweight container virtualization
- *Data plane* – optimized dataplane with DPDK, OVS and OpenFastPath provides top line throughput and latency
- *Edge Link* – Enea Edge Link provides flexible VNF lifecycle management over a wide variety of interfaces
- *APT packet management* - extending and adapting the platform with prebuilt packages
- *Device management framework* – device management enabling FCAPS functionality

KEY BENEFITS

Ready for Commercial Deployment

Packaging, validating and maintaining all the components needed for a carrier-grade virtualization platform is very time consuming and costly. Because Enea NFV Access is a complete and deployment ready virtualization platform with the performance, reliability and functionality required for telecom use, it reduces risks and shortens time-to-market for carriers and service providers. It is carried through its lifecycle by a continuous integration and delivery methodology, providing a stable and secure platform that integrates the latest advancements in virtualization technology, while being fully hardened and validated.

High Performance

Highly optimized virtual networking performance provide reduced latency, high throughput (10 Gb wire speed), and low processing overhead. It allows high compute density on white box hardware, maintaining performance when moving functionality from application specific appliances to software on standard hardware. A less optimized platform would need more expensive hardware to perform the same workload.

Optimizing boot speed minimizes the time from reboot to active services, improving resilience and availability.

Containers and Virtual Machines

Enea NFV Access provides virtualization both using containers and virtual machines. Containers provides Enea NFV Access with lightweight virtualization for tiny VNF footprint and very short time from start to enabled network services. VMs provide virtualization with secure VNF sandboxing and is the preferred virtualization method for OPNFV compliance. Enea NFV Access

even allows combinations of containers and VMs for highest possible user adaptability.

Scalable from Edge Devices to High-End Servers

Enea NFV Access scales from small white box edge devices up to high-end network servers. Thanks to the streamlined footprint, Enea NFV Access can be deployed on systems as small as single 2-core ARM devices. It scales up to clustered 24 core x86 Xeon servers and beyond, allowing multiple VNFs on the same machine.

With its unrivaled scalability, Enea NFV Access eliminates the need to use different virtualization software for different hardware platforms, saving costs through single source provisioning.

Open Standards

Building on open source, Enea NFV Access prevents vendor lock-in thanks to its completely open standards and interfaces. Unlike proprietary platforms that either do not allow decoupling of software from hardware, or prevents NVF portability, Enea NFV Access includes optimized components with open interfaces to allow full portability and interoperability.

Flexible Device and VNF Management

Flexible interfaces for VNF lifecycle management and service function chaining are important to allow a smooth transition from traditional network appliances to virtualized network functions in existing networks, as it plugs into a variety of interfaces. Enea NFV Access supports VNF lifecycle management and service function chaining through OpenStack, NETCONF, REST, CLI and Docker.

Enea NFV Access integrates a powerful device management framework that enables full FCAPS functionality for powerful management of the platform.

Hardware Independent

Enea NFV Access supports both ARMv8 and x86 architectures from various vendors out-of-the-box, adding to its scalability and adaptability for various use cases and set-ups. With complete reference implementations for an array of processor boards, cost and time for deployment is minimized. With one vCPE platform, costs for platform provisioning and maintenance is kept to a minimum.

ENEA NFV SERVICES

Through our services, we share our networking and NFV knowledge to help our clients speed up development, reduce project risks, and ultimately, get a better product to market faster. We provide services for proof-of-concepts in lab environments, and rollouts and deployment in operational environments.