

## DATASHEET

# uCPE Benchmarking



## Open Architecture

The OneOS6-LIM (Local Infrastructure Manager) creates a virtualized compute environment with the ability to host Virtualized Network Functions (VNFs) and other Virtual Machines (VMs) on a universal Customer Premises Equipment (uCPE), also called whiteboxes. These VNFs and VMs can be sourced from Ekinops or from almost any third party, thanks to a straightforward integration process.

We also understand that a customer may prefer to acquire white-box hardware (uCPE) from a third party and having Ekinops OneOS6-LIM running on it as an operating system. Ekinops can propose a service whereby our experts will benchmark the functional performance of a third party hardware (uCPE) running Ekinops OneOS6-LIM.



### uCPE Benchmarking Service



The uCPE Benchmarking service pursues the goal of examining the eligibility, listing the possible limitations and providing some basic performance benchmarking for uCPE platform, while hosting Ekinops OneOS6-LIM as an operating system. This process will be executed in a three-phased approach as described below.

### Phase 1- Platform Eligibility

Ekinops will provide a detailed list of pre-requisites need to be met in order to commence the benchmarking service. These pre-requisites included technical, logistical and support aspects. Our virtualization architect will also assist the Customer in verifying the third-party uCPE hardware specifications to ensure that the technical pre-requisites are met.



### Phase 2 - Platform Preparation



Upon reception of the uCPE samples in Ekinops labs, the virtualization engineer will check the UEFI boot settings and startup sequences, in order to verify the proper loading and installation of the Ekinops OneOS6-LIM operating system.

Each uCPE vendor uses its own Ethernet port numbering. A check is carried out with the OneOS6-LIM GUI in order to verify that a logical mapping to the physical port numbering on the uCPE can be achieved. The mapping procedure is documented for future use.

### Phase 3 - Capabilities and Performance Benchmarking

Once the OneOS6-LIM is correctly loaded and functional, the Ekinops embedded virtual router functionality is activated and the engineer will verify that the uCPE supports:

- DPDK
- Direct Access (PCIe based)
- SR-IOV
- AES-NI for encryption



The performance of the uCPE is benchmarked using the Ekinops embedded virtual router.

Data routing tests can be performed with the following conditions:

- RFC2544 testing
- IMIX410 traffic profile with NAT, Class of Service (CoS) and Access Lists
- Impact of acceleration technologies (depending on availability) such as DPDK, SR-IOV DPDK etc.
- In addition to basic routing, IPSEC performance can optionally be measured, which makes use of AES-NI

Once completed, our test-engineer creates a report detailing the results of the performance benchmarking including its possible limitations and recommendations concerning the viability of the uCPE. When the benchmarking results in a positive recommendation, a OneOS6-LIM disk image and installation procedure, including specific instructions related to the uCPE can also be provided.

## Extra Validation Options

A customer may request that additional functionalities be part of the benchmarking process. For example; the uCPE could include a 4G interface, or the customer may require testing with multiple VNFs whether by Ekinops or third party. Providing that the requested deliverables be considered as viable, they will be subject to an additional quote, based on a specific Scope of Work (SoW).

## Technical Prerequisites

Hardware Prerequisites							
<ul style="list-style-type: none"> <li>■ x86 based processor architecture</li> <li>■ minimum 2 virtual CPU cores (CPU threads)</li> <li>■ minimum 8 Gbyte RAM</li> <li>■ UEFI Boot should be supported (no legacy BIOS)</li> <li>■ minimum a 32 GBytes HDD/SSD disk size</li> <li>■ HDD/SSD must be SATA or NVME (no eMMC)</li> <li>■ Serial console port</li> <li>■ USB port (min V2.0)</li> <li>■ The Ethernet controller for the physical Ethernet ports should be of any of the following types:                             <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">Intel Ethernet controller i210</td> <td style="padding-left: 20px;">Intel Ethernet controller i225</td> </tr> <tr> <td style="padding-left: 20px;">Intel Ethernet controller i350</td> <td style="padding-left: 20px;">Intel Ethernet controller X553</td> </tr> <tr> <td></td> <td style="padding-left: 20px;">Intel Ethernet controller X722</td> </tr> </table> </li> </ul>		Intel Ethernet controller i210	Intel Ethernet controller i225	Intel Ethernet controller i350	Intel Ethernet controller X553		Intel Ethernet controller X722
Intel Ethernet controller i210	Intel Ethernet controller i225						
Intel Ethernet controller i350	Intel Ethernet controller X553						
	Intel Ethernet controller X722						
Logistical Prerequisites	Support Prerequisites						
<ul style="list-style-type: none"> <li>■ Minimum 2 samples for each type of uCPE should be provided</li> </ul>	<ul style="list-style-type: none"> <li>■ Schematic block-diagram and technical datasheet of the uCPE</li> <li>■ Access to a technical support contact with the uCPE vendor</li> </ul>						

More info on Ekinops Virtualization Services [here](#).

## About Ekinops

Ekinops is a leading provider of open and fully interoperable Layer 1, 2 and 3 solutions to service providers around the world. Our programmable and highly scalable solutions enable the fast, flexible and cost-effective deployment of new services for both high-speed, high-capacity optical transport networks and virtualization-enabled managed enterprise services.

Our product portfolio consists of three highly complementary product and service sets: Ekinops360, OneAccess and Compose.

- Ekinops360 provides optical transport solutions for metro, regional and long-distance networks with WDM for high-capacity point-to-point, ring and optical mesh architectures, and OTN for improved bandwidth utilization and efficient multi-service aggregation.
- OneAccess offers a wide choice of physical and virtualized deployment options for Layer 2 and Layer 3 access network functions.
- Compose supports service providers in making their networks software-defined with a variety of software management tools and services, including the scalable SD-WAN Xpress.

As service providers embrace SDN and NFV deployment models, Ekinops enables future-proofed deployment today, enabling operators to seamlessly migrate to an open, virtualized delivery model at a time of their choosing.

A global organization, Ekinops (EKI) - a public company traded on the Euronext Paris exchange - operates in 4 continents.

