COMPOSE

ekinops
Empowering Networks

SMART Connect

To support service providers and enterprises, Ekinops extends its widely deployed branch routing solution (OneOS6) on pCPE & VNF to include advanced connectivity functionalities.

The Smart Connect solution supports service providers in evolving their connectivity offers and leverages a software-defined approach to deliver services while reducing deployment complexity.

Smart Connect functionalities focus on delivering high value to small and medium enterprises (SMB) or highly distributed large enterprises with small offices (such as Retail with high number of Point of Sales). Smart Connect improves their availability to Internet and secures their IT at scale.

Complete with robust visibility and delegation capabilities, Smart Connect enables service providers to rapidly deploy or upgrade their connectivity offers with continuity, security, agility, and visibility to their end-customers.

Features & Benefits for Services Providers

Features	Benefits
Visibility Smart Connect automatically recognizes 5000+ SaaS applications and provides network traffic charts such as site traffic volume evolution per application.	End customers can understand network usage, check that WAN links are not overloaded and discover potential shadow IT
Multiple Uplinks Smart Connect can manage unlimited multiple uplinks, in active / active or active / passive. Traffic failovers in less than 3 seconds. It also includes an active / shutdown mode, particularly well-suited for 4G/5G backup use cases. Traffic steering using application recognition engine.	End customers can increase their network availability and business continuity. Multiple uplinks in active / active means more bandwidth and less traffic congestion.
QoS Smart Connect protects sensitive and business critical applications by shaping other apps when uplinks are saturated.	End customers can improve their User Experience on apps such as videoconferencing. They can increase their business productivity.
Cloud Breakout Smart Connect can send traffic to Secure Service Edge (SSE) for protection at scale. It can for example send traffic to Zscaler, Palo Alto Prisma or Cato Networks.	End customers can secure and control users, guests, and printers without any agent at scale. End customers do not have to change their edge appliance when traffic increases.
Self-service Portal Smart Connect provides a dedicated self-service portal for each end customer.	Self-service portal puts end customers in charge. They can manage their operational changes, bringing agility and keeping managed services costs under control.
One-box Solution Smart Connect is a service included in OneOS6, therefore available on all Ekinops pCPE and uCPE routers. Smart Connect is also available on the Ekinops vRouter VNF (ONEv600) to run on any white boxes.	Service providers can reduce their operational costs by having a single box and a single OS for all services and all connectivity (DSL, 4/5G, G-FAST, Fiber, etc.). With today climate crisis, Ekinops provides a sustainable solution, by preventing the addition of any new over-the-top box: no new hardware fabrication, no new hardware transportation, and no new hardware electrical consumption.
White Label Smart Connect is a white-label solution. Both the portal and CPEs can be customized with logo, colors, and font to align with Service Provider's design guidelines	Service providers can stop advertising technology vendors'brand and advertise their own brand.

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Features	Benefits
Multi-tier & Multi-tenant Management Smart Connect is managed through a management platform called **Director.** The Director offers a 3-tiers approach allowing service providers to delegate to a partner and to a customer while offering a consistent interface to each of them. Director scales on demand.	Service providers can address their various go-to-market models: direct, indirect, full managed services and co-management, within the same solution. Director delivers a customer portal (and partner portal) to accelerate market launch and provides a single point of interaction with OSS/BSS. Service providers can stack new customers on one Director. Service Provider's revenue scales faster than cost, resulting in an exponential profit.
One Orchestrator Solution Smart Connect provides a dedicated self-service portal for each end customer.	Service Providers can leverage their investment into Smart Connect management platform to provide One-box SD-WAN managed services.

Use Cases

Always-on business

For: Small and Medium Business (SMB) or Point of Sales (PoS)

SMBs and PoS are now digitalized: their business heavily relies on digital resources. A Point of Sales without Internet connection is a Point of Sales that cannot process any payment, that cannot access inventory and that cannot access their CRM. It is a Point of Sales out-of-business. SMBs as well now needs a high-availability connection just like bigger enterprises.

Smart Connect provides the possibility to add multiple uplinks, in active / active for a larger bandwidth, or in active / passive, for example with a 5G backup. Enterprises can now improve their business continuity thanks to Smart Connect.

Scalable security

For: Small and Medium Business or Point of Sales

Cyber threats are increasing. Hackers are more and more organized. Some of them also target smaller organizations simply because defense level is lower. Sometimes it can also provide an entry point to larger groups. Organizations of all sizes must protect against these cyberthreats.

Defenses technologies exist, but most are compute-intensive, like web-filtering and anti-malware, mainly because they require to decrypt network packets, and to re-encrypt them. Doing this task at the edge was making sense when access connectivity was few Mbps. Many sites now have hundreds of Mbps accesses, even Gbps. It simply does not scale anymore.

The solution is to use the Cloud pattern for cybersecurity: sharing resources between sites and other enterprises. Practically speaking, edges redirect Internet flows to a cloud, to perform resource-intensive security tasks.

Smart Connect provides one-click IPsec interfaces to Secure Service Edges (SSE) like Zscaler, Palo Alto Networks Prisma or Cato Networks. This interface can even be optimized, by removing the encryption, for an even thinner edge. Also, Smart Connect provides the possibility to breakout trusted delay-sensitive flows like O365 directly to Internet, for a better user experience. Smart Connect also provide all security functions required at the edge: stateful firewall and DDoS.

To sum it up, Smart Connect is the perfect companion of your SSE solution.

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Use Cases

Reducing carbon fooprint

For: Sustainable Service Providers

Advanced connectivity solutions like SD-WAN are traditionally delivered as an add-on of the service provider connectivity, i.e., with a dedicated appliance interconnected to the service provider's CPEs. Extracting resources, manufacturing a new hardware, transporting it on site, powering it, all that stack up carbon in our atmosphere, and contribute to climate crisis.

Smart Connect is a piece of software embedded in the Ekinops CPE range operated via OneOS6. Service providers can have one single box for MPLS access, Internet access and Smart Connect. Instead of having a MPLS access router, and Internet access router and an SD-WAN appliance of 200 KgCO2eq each, Ekinops provides a single box of less than 200 KgCO2eq. It reduces carbon footprint by more than 3.

Ekinops also work hard to reduce our CPE's carbon footprint, for example by turning Wi-Fi chipset off during Non-Working Hours. Ekinops CPEs have among the lowest carbon footprint on the market. For example, our ONE521, which is able to handle up to 700 Mbps bidirectional of Smart Connect traffic, has a carbon footprint of 138.5 KgCO2eq during its entire lifecycle, based on Life Cycle Assessment (LCA), compliant with ISO 14040 and ISO 14044.

Multi-tier & Multi-tenant Central Management

DIRECTOR

The Director delivers all the FCAPS functions of a Network Management System (NMS) and delivers powerful User Interfaces (UI) to delegate activities, if needed. Director is a 3-tiers model, each tier having its dedicated UI focusing on its field of responsibilities.
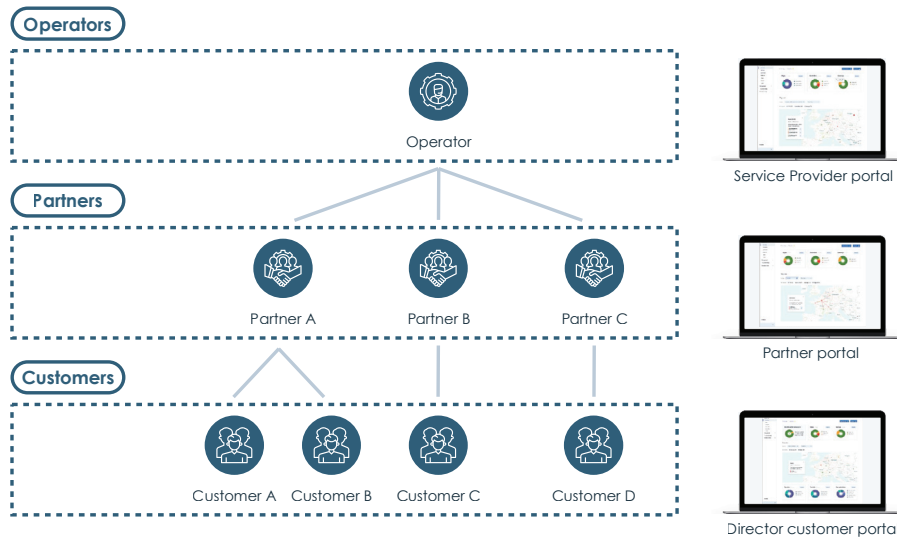
The Director utilizes a template and delegation model from the service provider up to the end customer. New customers can rapidly be deployed using a single template freeing up service providers to focus on customer-specific requirements as needed.

The Director comprises a partner portal enabling partners to deliver managed services to their end customers leveraging a common infrastructure delivered and sustained by the service provider. As such, service providers can leverage the same solution across their various go-to-market models: direct, indirect, or project-based from the same infrastructure.

Customers may also directly monitor their Smart Connect deployment from their dedicated portal and depending on the granted delegation level performs some actions like traffic steering rules definition, site enrolment, LAN service configuration, etc.

Multi-tier & Multi-tenant Central Management

CONTROLLER

The controllers manage the control plane of the Smart Connect solution. For example, they handle CPE's NetFlow and Syslog collection.

Controllers are multi-tenant. They can be shared between customers (and partners) making scaling from small to very large networks possible.

Director and Controller can be delivered as containers, or on Ekinops Compose Cloud as dedicated instances.

Smart Connect Main Features

Engines	
Application recognition	Yes (5000+). 1st packet
WAN	
Service Provider demarcation	Yes (xDSL, Fiber, 4G, 5G, MPLS) inc. underlay configuration (PPoE, etc.)
Multiple uplinks	Yes, with unlimited number of uplinks. 3x modes: active/active, active/passive or active/shutdown Switchover in less than 3 seconds (a/a or a/p) Configuration per application In active/active, load-sharing is per session
QoS	Yes, upload QoS per application. Shaping + DSCP marking
Security	
Breakout to Security Service Edge (SSE)	Yes, through IPSec. Already running with Zscaler, Palo Alto Prisma and Cato. Null encryption supported. Tunnel monitoring and automatic mount back. Local breakout. Configuration per application
TCP/UDP stateful firewalll	Yes
DDOS protection	Yes
LAN	
Routing	Yes: BGP and static
Wi-Fi	Yes
NAT	Yes
DHCP	Yes
Central Management	
Delivered On Premises	Yes, containers
Delivered in the Cloud	Yes. a dedicated instance per Service Provider
Service Provider Portal	Yes, with dedicated RBAC
Partner Portal	Yes, with dedicated RBAC
Customer Portal	Yes, with dedicated RBAC
Troubleshooting tools	Yes
Traffic reports	Yes
Northbound REST API	Yes
Edge	
High-availability Edge	Yes
pCPE	Yes
vCPE	Yes, VM

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Supported Hardware

Ekinops Smart Connect solution runs on **all the Ekinops devices powered by OneOS6,** which represents a large range of CPE offering multiple connectivity options, the Ekinops vRouter (ONEv600) as well as uCPEs (Ekinops OVP range and third-party white boxes). Below the latest Ekinops CPEs:

Small pCPE

Product	ONE421	ONE521	ONE531	ONE621	ONE-5G
Bidirectional recommended WAN speed IMIX 409	100 Mbps	250 Mbps	350 Mbps	600 Mbps / 1 Gbps*	1 Gbps
Bidirectional recommended Cloud Breakout encrypted speed. Encryption can be disabled for Cloud Breakout. IMX409	30 Mbps	60 Mbps	60 Mbps	300 / 600 Mbps*	600 Mbps
Interfaces	1x GbE UTP/SFP combo 4x GbE UTP			2x GbE SFP	
WAN interfaces - DSL	A/VDSL optinal			NA	NA
WAN interfaces - Radio	4G cat4/6 optional	4G cat4/6 optional 5G optional	4G cat4/6 optional 5G optional	4G cat4/6 optional 5G optional	4G cat 18/20 5G
Wi-Fi	Dual concurrent WiFi5 optional			Dual concurrent WiFi6 optional	

Mid to Large pCPE

Product	ONE2560	ONE2561	ONE3540
Bidirectional recommended WAN speed IMIX 600	2 Gbps	2 Gbps / 5 Gbps*	20 Gbps
Bidirectional recommended Cloud Breakout encrypted speed. Encryption can be disabled for Cloud Breakout. IMX600	1 Gbps	1 Gbps	10 Gbps
Interfaces	2x GbE combo SFP/UTP 2x GbE STP 8x GbE	2x 10GbE combo SFP+/UTP 2x GbE STP 8x GbE	2x GbE combo SFP+ 2x 10GbE STP+ optional 15x GbE
WAN interfaces - Radio	4G cat 16 optional 5G optional		NA
Wi-Fi	NA		

vCPE

Product	ONEv600
Bidirectional recommended WAN speed IMIX 409	100 Mbps - 10 Gbps
Bidirectional recommended Cloud Breakout encrypted speed. Encryption can be disabled for Cloud Breakout. IMX409	100 Mbps - 10 Gbps

subject to license

Ekinops is also extending the support of Smart Connect to its OneOS6-LIM. As a software designed for white boxes, OneOS6- LIM is highly portable and has been proven on hardware from the following vendors delivering rich uCPE functionalities.

DELLEMC   Lanner   ADVANTECH   Silicom Ltd. Connectivity Solutions   Hewlett Packard Enterprise   NEXCOM   Portwell   AEWIN

About EKINOPS

Ekinops is a leading provider of open, trusted and innovative network connectivity 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 as well as 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 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 and SixSq Edge-to-Cloud solutions.

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 on four continents.

EKINOPS360
Dynamic Optical Transport

ONEACCESS
Fast Network Virtualization

COMPOSE