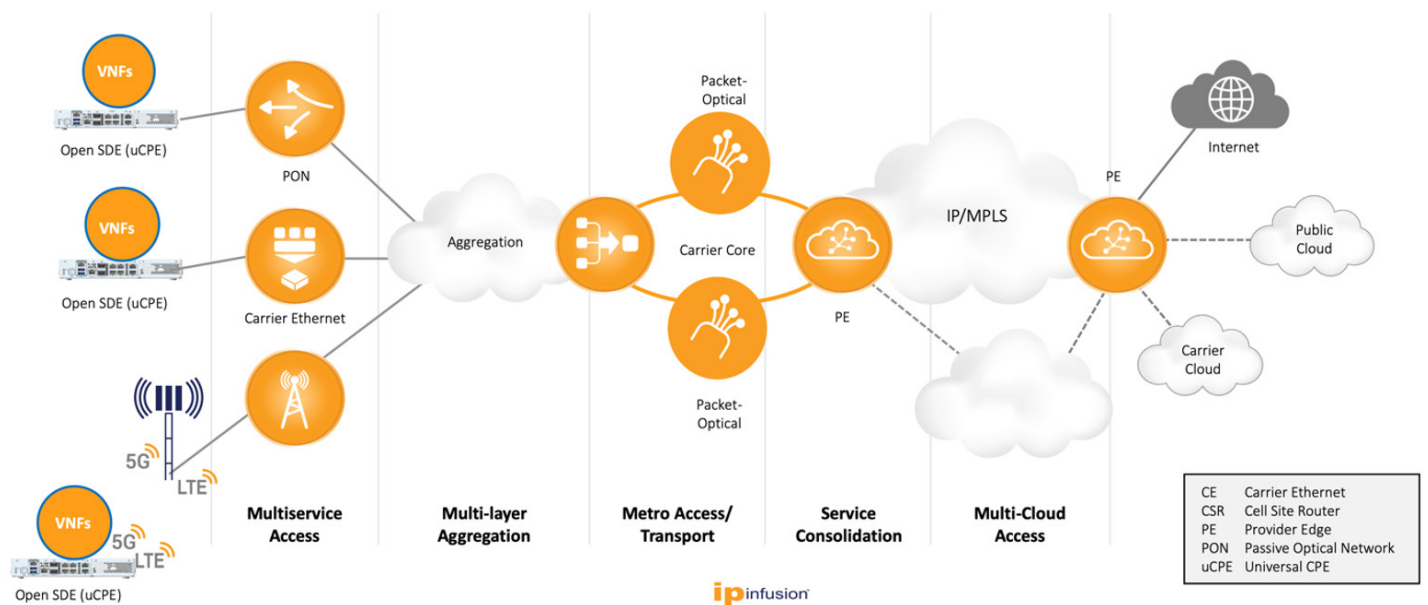


Open SD-Edge

Product Brief

IP Infusion: Single Platform, Multiple Use-Cases

IP Infusion, the leader in disaggregated networking solutions, delivers enterprise and carrier-grade software solutions allowing network operators to reduce network costs, increase flexibility, and to deploy new features and services quickly. The disaggregated networking model allows network operators to build networks with diverse, standards-based hardware and software.



IP Infusion is an integrator and customer service provider for DANOS-Vyatta edition. Based on the DANOS open source software, DANOS-Vyatta edition is a production-ready, carrier grade, feature-rich network operating system (NOS) that meets the demand for functionality and reliability required in the carrier environment. DANOS-Vyatta edition includes enhancements over DANOS and has been fully deployed by AT&T and is running in AT&T's production network.

Open SD-Edge

The Open SD-Edge platform gives Enterprises and Managed Service Providers (MSPs) the increased agility to add new services and lower operational costs. New services can be deployed quickly by onboarding third-party VNFs such as Firewall, SD-WAN, and WAN optimization.

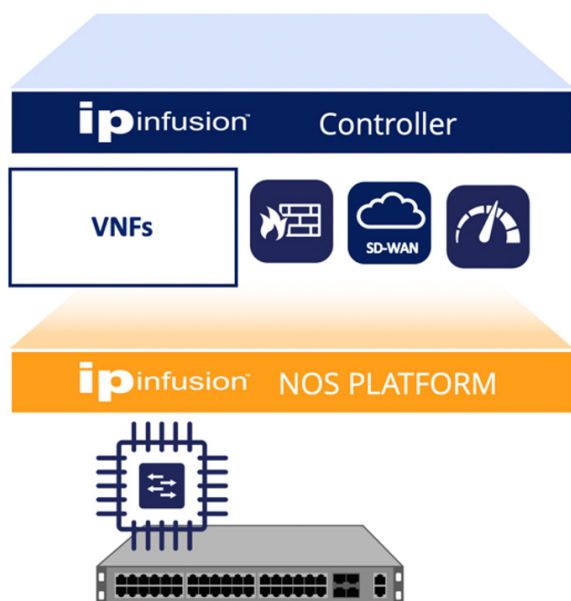
Key differentiators of the Open SD-Edge platform include:

- **Truly open architecture** featuring DANOS-Vyatta edition open source-based software and best-of-breed Open Hardware (White box uCPE) delivers line rate throughput and lowers total cost of ownership.
- **A virtualization platform** with built-in routing, security functions and a common abstraction layer with support for hardware offloads and software data plane to enable operators to quickly ramp up new services and revenue.
- **Fully managed NFV infrastructure platform** offering choice of uCPE hardware and, best-in-class VNFs. Complete VNF life cycle management solves operator pain points to deploy new on-demand services by integrating with MSP's MANO system.

Along with global 24/7 support, IP Infusion offers a fully validated and packaged solution which includes the DANOS-Vyatta edition (DVE) network operating system and off-the-shelf x86 platforms. White box platforms from Silicom are the first in a growing list of Universal Customer Premise Equipment (uCPE) offerings.

In the ever-present quest to improve agility while reducing costs, enterprises large and small are capitalizing on the compelling benefits of virtualization and the cloud. In response, Cloud and Managed Service Providers are leveraging Network Functions Virtualization (NFV) to introduce new services to facilitate Cloud Migration.

Open SD-Edge Components



Management and Orchestration

Best-in-Class, validated VNF services

DVE Open, Flexible Virtual Router and Hypervisor for Virtualization

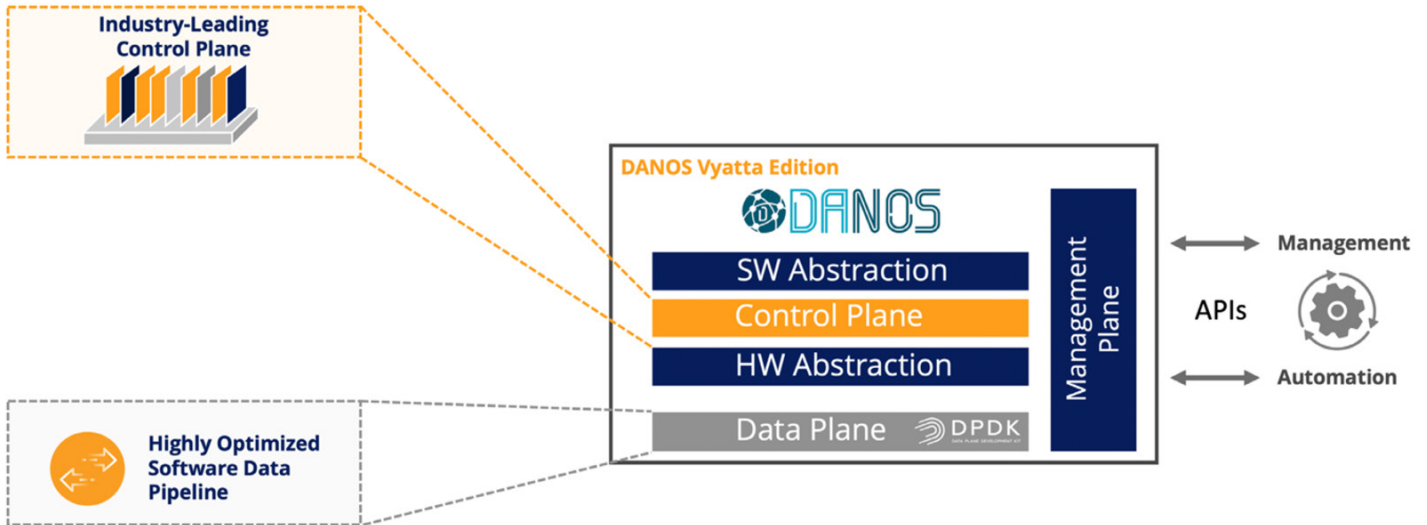
Optional Switching Silicon

Hardware Resources (Compute, Storage and Networking)

DANOS-Vyatta edition NOS Platform

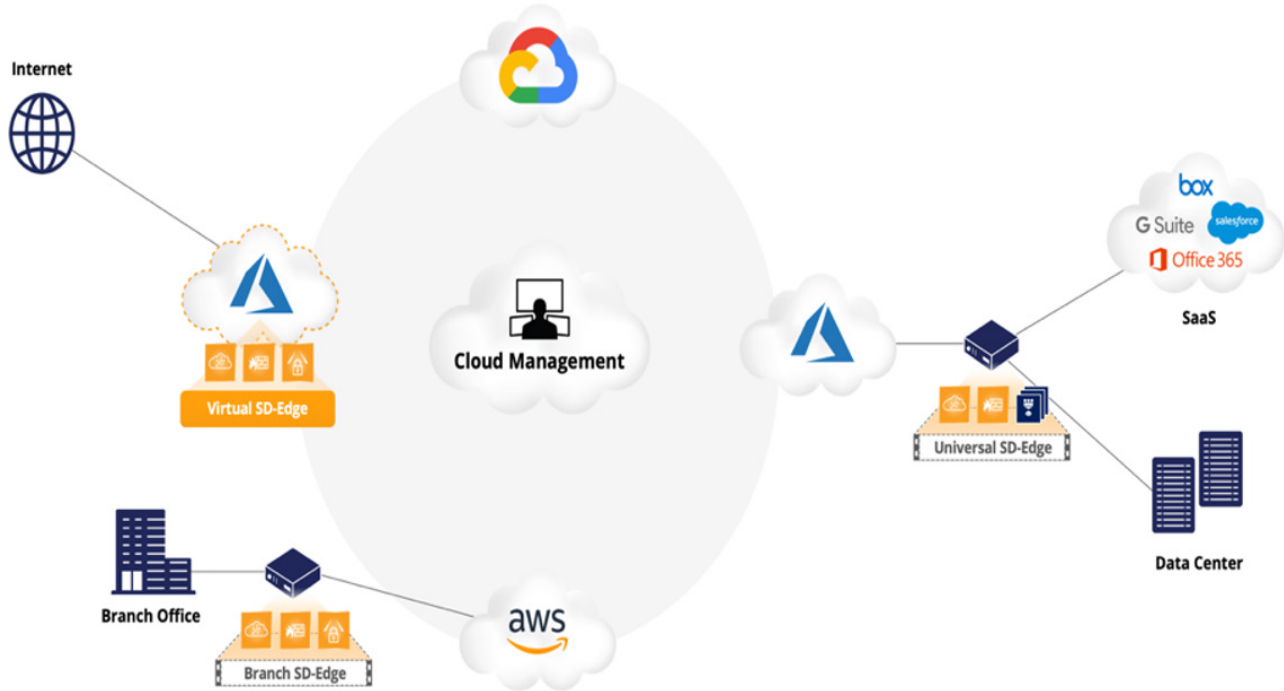
DANOS-Vyatta edition Software is the industry first commercially available disaggregated Network Operating System (NOS) for both wireless and wireline use cases. The open architecture paves the way towards network disaggregation, without compromising communications functionality.

DVE is based on the Linux Foundation DANOS project, the first carrier-focused network operating system platform. It is the industry first commercially available disaggregated Network Operating System (NOS) for both wireless and wireline use cases.



Solution Offerings

The Open SD-Edge platform supports a range of uCPE use cases and delivers a platform for operational simplicity, agile deployment of virtualized services and lower CAPEX, leading to reduced total cost of ownership. It includes white box hardware, DANOS-Vyatta edition, and hosts third-party Virtualized Network Functions (VNFs) for SD-WAN, routing, VPN, and firewall support for VNFs on a general-purpose appliance. This eliminates the need for stacks of proprietary equipment and software that require specialized IT skills to install, configure, and maintain.



The Open SD-Edge comprises of three different solutions:

- **Virtual SD-Edge** – Available in virtual form-factor to securely extend VPN to the public or private cloud and deliver scalable WAN, Security and CG-NAT functions.
- **Branch SD-Edge** – Available in a white-box or virtual form-factor for securely interconnecting branch or distributed offices and migrating workloads to the cloud.
- **Universal SD-Edge** – Offers next generation of uCPE solutions at the WAN Edge for connecting distributed branches and Enterprises to hybrid cloud environments. Provides Enterprises and Managed Service Providers (MSPs) the increased agility to add new services and lower operational costs. New services can be deployed quickly by onboarding third-party VNFs such as Firewall, SD-WAN, and WAN optimization.

VIRTUAL SD-EDGE	BRANCH SD-EDGE	UNIVERSAL SD-EDGE
<ul style="list-style-type: none"> • Secure, robust connectivity to the cloud • Available for hosting in the Public Cloud Marketplace or Private Cloud/Server • Includes: vRouter, VPN, vFirewall 	<ul style="list-style-type: none"> • Secure Branch Office connectivity and Cloud Migration • VNF or White Box form factor (multi-platform) • Includes: vRouter, VPN, vFirewall, • 1 or 10G interfaces 	<ul style="list-style-type: none"> • Enterprise/Branch Office connectivity • VNF or White Box form factor(multi-platform) • Includes: vRouter, vFirewall, VPN • Hosts third-party VNFs

Solution Distribution and Form Factor

PARAMETER	VIRTUAL SD-EDGE	BRANCH SD-EDGE	UNIVERSAL SD-EDGE
Image	VM image for public clouds (Azure, AWS, GCP) and on-prem (x86 server)	DVE image as host OS for the uCPE device or x86 server with networking features	DVE image as host OS and hypervisor for uCPE device or x86 server with ability to run VNFs on top of the DVE host OS
Distribution	<ul style="list-style-type: none"> • VHD image • AMI image • KVM image 	<ul style="list-style-type: none"> • Bootable image for the target device 	<ul style="list-style-type: none"> • Bootable image for the target device
Licensing	Licensing to restrict the number of cores available to the VM	Licensing to restrict the total number of cores available to the DVE host OS	Licensing to restrict the total number of cores available to the DVE host OS including any additional VNFs

ABOUT IP INFUSION

IP Infusion, a leader in disaggregated networking solutions, delivers enterprise and carrier-grade software solutions allowing network operators to reduce network costs, increase flexibility, and to deploy new features and services quickly. IP Infusion is headquartered in Santa Clara, Calif., and is a wholly owned and independently operated subsidiary of ACCESS CO., LTD. Additional information can be found at <http://www.ipinfusion.com>

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