ipinfusion™

OcNOS™

# OcNOS: Industry's First Full-featured Network OS for Disaggregated Networking

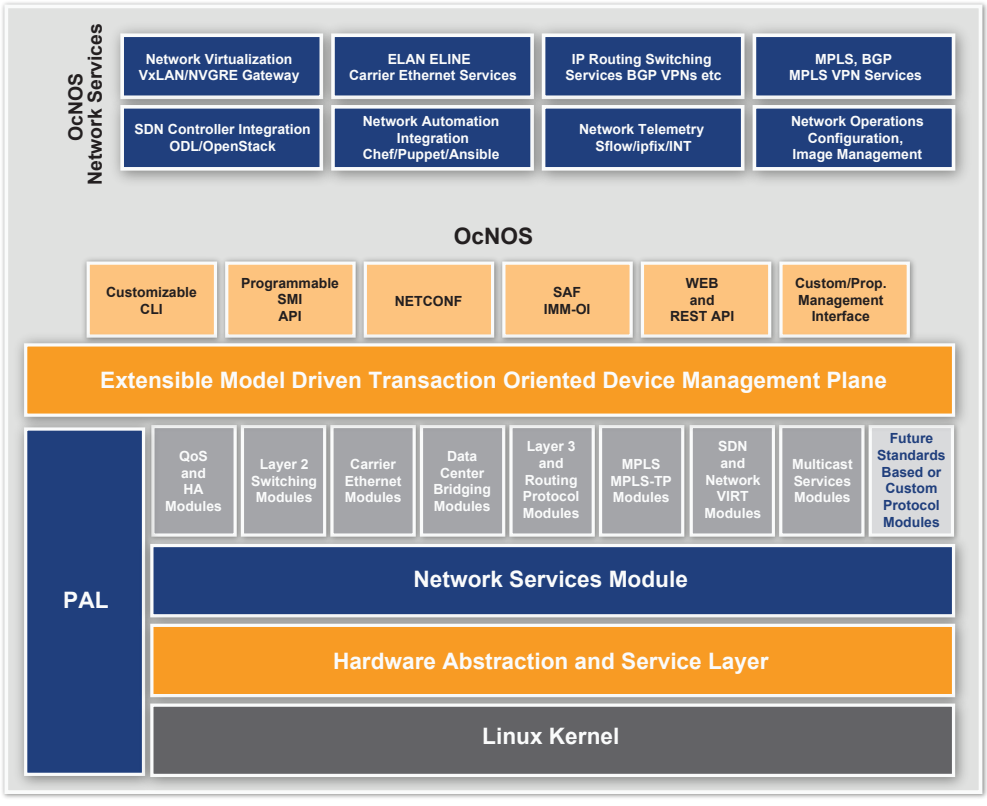
## Carrier-grade NOS for Bare Metal Switches

OcNOS is the industry's first full-featured network OS for disaggregated networking. Its features include advanced capabilities, such as extensive switching and routing protocol support, MPLS (Multiprotocol Label Switching), and SDN (software defined networking). OcNOS features hybrid, centralized or distribute network support; support for programmable data pipeline with advanced in-band network telemetry features; and a robust data plane built on merchant silicon.

OcNOS provides seamless transition from traditional networks to open networks with investment protection. OcNOS gives network operators, carriers and enterprises the physical software solution needed to achieve the disaggregated networking model. Instead of a vendor locked-in model, and proprietary solution models, a disaggregated networking model allows network operators to build networks with diverse, manage networks on their own, and rapidly deploy new networking features and services at less TCO.

Based on the widely-deployed and time-tested ZebOS network stack, OcNOS brings the power of the Open Compute Project, an open hardware movement and foundation, to data networking.

### System Architecture




### Features and Benefits

OcNOS is a modular, multi-tasking network operating system, with tight integration capabilities on commodity hardware. This design allows for scaled and performance critical deployments. The niche coupling with merchant silicon utilizes key hardware capabilities for better performance and feature set.

#### Common Software for Multiple Deployments and Hardware

OcNOS is designed using several abstraction layers. The hardware abstraction layer, allows the OcNOS software to run over multiple control plane CPU `and forwarding chipset hardware. The system calls are also well abstracted allowing to switch across operating systems if required. It has been integrated and verified with multiple commodity hardware, which again allows seamless portability across diverse network hardware.

#### Programmable Data pipeline and Telemetry

- OcNOS includes support for programmable data pipeline which enables IP Infusion to serve different markets / use-cases with the same chip with a new P4 program
- High-performance per-packet telemetry providing packet level visibility into path changes, micro-bursts and latency spikes
- By integrating telemetry with our solution for large scale data center fabric using eBGP/VxLAN, we can provide full visibility into the packets for better application level control.
- The goal is to provide customers with a next-generation, high performance network monitoring solution using In-Band Network Telemetry. This integrated solution delivers better performance, deeper levels of insight, broader visibility, and increased operational efficiency compared to traditional monitoring solutions.

## Interoperation and Ease of Use

The OcNOS solution is built using open networking standards with semantics for device management extensions. The operation and management is provided using CLI, SNMP which is built on top of a fully transactional management plane. This allows for easy manageability and interoperate with another vendor. OcNOS management plane can support wide variety of management interfaces besides CLI such as SNMP, NETCONF with design for future NBI interfaces like REST and IMM-OI.

## Support for Industry Requirements

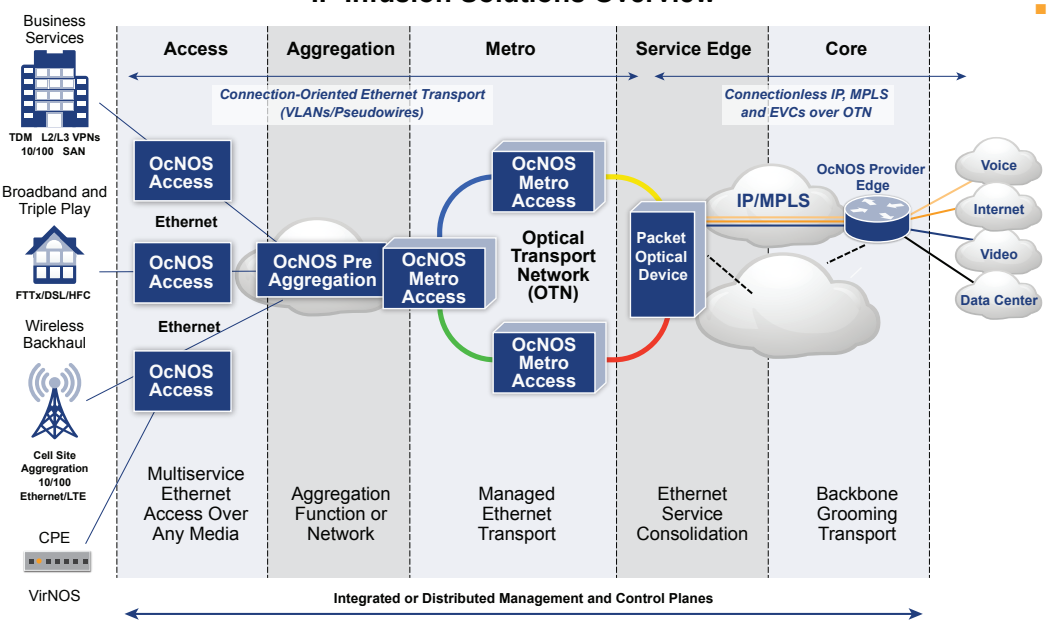
***Key Solutions:***

1. Cloud Data Center and DCI needs
2. Internet Exchange Point
3. Intelligent Edge Aggregation
4. Mobile Backhaul/Cell Site Router – 5G transition
5. Integrated Application Container

## Designed From The Ground Up; Based on ZebOS® Design

- OcNOS has been designed from the ground-up and is optimized to address the needs of public/private/ hybrid cloud network.
- OcNOS enables new applications and ushering in the era of Software Defined Networks (SDN), newer, demanding data center and enterprise network environments.
- OcNOS heavily borrows from the popular ZebOS® line of products, it takes advantage of a rich feature density and robustness that has built up over the years. OcNOS provides industry standard CLI, supports all standard MIBs and other standard operation and management tools.
- Its integrated centralized management and provisioning layer allows for transaction based configuration and device feature modelling.

## IP Infusion Solutions Overview

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### About IP Infusion

IP Infusion, the leader in disaggregated networking solutions, delivers the best network OS for white box and network virtualization. IP Infusion offers network operating systems for both physical and virtual networks to carriers, service providers and enterprises to achieve the disaggregated networking model. With the OcNOS™ and VirNOS™ network operating systems, IP Infusion offers a single, unified physical and virtual software solution to deploy new services quickly at reduced cost and with greater flexibility. Over 300 customers worldwide, including major networking equipment manufacturers, use IP Infusion's respected ZebOS platform to build networks to address the evolving needs of cloud, carrier and mobile networking. 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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