

OcNOS Data Center (DC)

July 2025

TOTAL NETWORK DISAGGREGATION

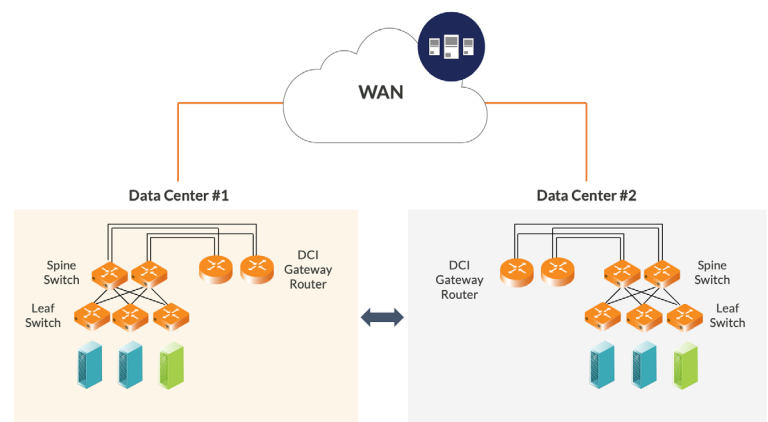
Take control of your network with Total Network Disaggregation from IP Infusion.
Complex networks simplified with open standards.

OcNOS Data Center

Web-scale networking requires new solutions to build hyperscale and cloud data centers equipped with a web-scale operations toolset. IP Infusion's Network Operating System (NOS) running on open networking switches combines the key principles of best-in-class hardware and software. IP Infusion's Open Compute Network Operating System (OcNOS), with a rich set of control plane features, can be used to build next gen data center network, providing robust quality, facilitating AI/ML workload transfers, ensuring lower costs and at the same time providing vendors with a best-of-breed selection for hardware platforms.

A key concept that will enable next-generation Data Center networks is the separation of the networking software from the switching or routing hardware. One of the biggest advantages of disaggregation is CAPEX reduction, followed by OPEX savings and deployment flexibility.

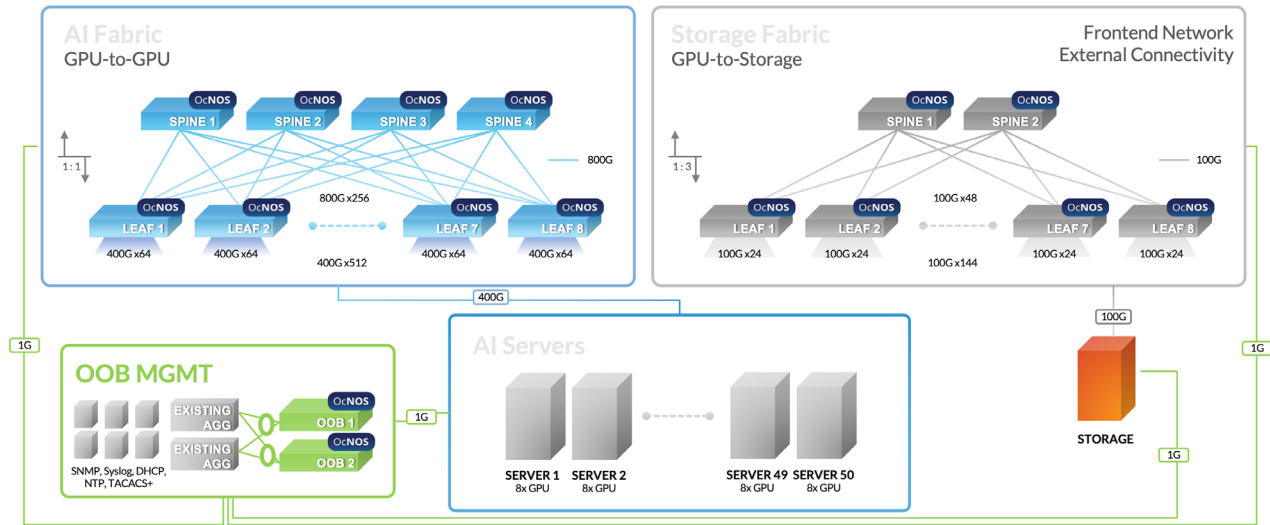
OcNOS provides a unique value proposition in helping build modern Data Centers. It provides robust quality with over 600 OEMs and end users, with hundreds of thousands of deployments in solutions spanning access, core, transport and data center networking. It is a feature rich solution with extensive legacy and new protocol coverage.



*OcNOS-AGGR is used as Data Center
Interconnect (DCI) Gateway Router*

OcNOS also drastically reduces operational costs as the same OS can be used across multiple solutions such as Data Center, Cell Site Router, and Provider Aggregation Networks.

OcNOS Powering AI/ML Data Center Network



For AI Fabric (aka Backend Network)

- Ethernet based Layer 3 IP network
- Dynamic load balancing to avoid collision of long-lasting elephant flows
- Lossless ROCEv2 (RDMA over Converged Ethernet) transport via PFC (Priority Flow Control) and ECN (Explicit Congestion Notification)
- Efficient support for mixed traffic types via ETS (Enhanced Traffic Selection)

For Frontend Network (incl. External Connectivity & Storage Fabric)

- EVPN-VxLAN overlay network
- Dynamic load balancing to avoid collision of long-lasting elephant flows
- Lossless ROCEv2 transport via PFC and ECN
- Efficient support for mixed traffic types via ETS

Out-of-Band (OOB) Device Management

- Layer 2 and layer 3 feature support
- Redundancy and availability
- Access control and security

OcNOS Software

OcNOS (Open Compute Network Operating System) is an industry-leading Network Operating System (NOS) providing the most complete carrier-grade disaggregated solution for data center and service provider networks. OcNOS-based solutions have been widely deployed in access, aggregation, transport and data center use cases for simplified operations and automation. It provides extensive programmability for end-to-end network management and orchestration. OcNOS features a single software image that runs across the entire portfolio of Open Compute platforms from leading vendors. This guarantees consistent operations, workflow automation and high availability, while significantly reducing operational expenses.

OcNOS provides industry standard CLIs, supports standard MIBs as well as the latest network management tools. Its integrated centralized management and provisioning layer allows for transaction-based configuration and device feature modelling. OcNOS is a modular, multi-tasking NOS, with tight integration capabilities on commodity hardware. This design allows for scaled and performance critical deployments.

OcNOS benefits include:

- Hardened carrier-grade solutions that are fully qualified with multi-vendor open networking platforms
- Breaks vendor lock-in
- Scalable software for terabit switching bandwidth
- Lower TCO: Up to 65-75% savings against Traditional Tier-1 vendors
- A broad ecosystem of technology and integration partners

OcNOS key highlights include:

- Packaged disaggregated networking solutions for faster deployment and shorter time-to-revenue
- Netconf and OpenConfig data models for network automation, orchestration, and control
- Industry standard CLI
- Streaming telemetry
- Ethernet for AI
- Flexible deployment: OcNOS solutions addressing different use cases across the data center and service provider networks
- World-class 24/7/365 support

OcNOS-DC Features, Services & Transport

Comprehensive Layer 2 Feature Support – VLAN, Link Aggregation, Provider Bridging, LLDP, MLAG, xSTP and Data Center Bridging (DCB)

Advanced Layer 3 Routing – BGP, RIP, OSPF, ISIS, BFD and VRRP

Complete Virtual Extensible LAN (VxLAN) – EVPN-MH (Multi-Homing), IRB (Integrated Routing and Bridging) anycast gateway, VxLAN-aware Quality of Service with IRB, ARP/ND cache and ARP suppression

AI/ML Networking – PFC over Layer 3, ETS, DCBX, ECN and Dynamic Load Balancing

Multicast Features – IPMv4, PIMv6, IGMP and MLD

Quality of Service – The most comprehensive available on any disaggregated NOS

Security – Storm control, Flow control, DHCP Snooping, IP Source Guard, Dynamic ARP inspection, Access Control List

Management – SNMP: v1, v2, v3, Zero Touch Provisioning, sFlow, NETCONF, OpenConfig YANG data models, DHCP server/client/relay, CLI Commit /Rollback, NTP Client/Server, Management VRF/ inband Management support, and gNMI telemetry streaming

Services



















- Layer 2 and layer 3 overlay networks via EVPN-VxLAN with IRB unified connectivity solution
- Distributed anycast gateway
- EVPN all-active multi-homing
- EVPN-ETREE

Data Center Networks

- Fabric Extensibility: Ethernet, IP and Overlay
- CLOS Fabric
- Ethernet for AI: Lossless transport of RDMA over Converged Ethernet v2 (RoCEv2)

OcNOS Data Center Hardware Platforms

The following hardware platforms are supported.

	Edgecore AS7326-56X SKU: IPBASE, PLUS Ports: 48 x 10/25 GE SFP28; 8 x 40/100 GE QSFP28 Switching capacity: 2 Tbps Switching chipset: Trident3-X7 		UfiSpace S9300-32D SKU: IPBASE, PLUS Ports: 32 x 400 GE QSFP-DD Switching capacity: 12.8 Tbps Switching chipset: Trident4 	
Edgecore AS4625-54T SKU: MGMT Ports: 48 x 10/100/1000Base-T RJ45; 6 x 1/10G SFP+ Switching capacity: 128 Gbps Switching chipset: Trident3-X2 	UfiSpace S8901-54XC SKU: IPBASE, PLUS Ports: 48 x 10/25 GE SFP28; 6 x 40/100 GE QSFP28 Switching capacity: 1.8 Tbps Switching chipset: Trident3-X5 	UfiSpace S9110-32X SKU: IPBASE, PLUS Ports: 32 x 40/100 GE QSFP28 Switching capacity: 3.2 Tbps Switching chipset: Trident3-X7 	Edgecore AS9726-32DB SKU: IPBASE, PLUS Ports: 32 x 400 GE QSFP-DD Switching capacity: 12.8 Tbps Switching chipset: Trident4 	UfiSpace S9321-64E  SKU: IPBASE, PLUS Ports: 64 x 800 GE QSFP-DD Switching capacity: 51.2 Tbps Switching chipset: Tomahawk5 
Celestica DS1000 SKU: MGMT, IPBASE Ports: 48 x 10/100/1000Base-T RJ45; 8 x 1/10 GE SFP+ Switching capacity: 128 Gbps Switching chipset: Trident3-X2 	Edgecore AS5835-54T SKU: IPBASE, PLUS Ports: 48 x 1/10 GE RJ-45; 6 x 40/100GE QSFP28 Switching capacity: 1.08 Tbps Switching chipset: Trident3-X5 	Edgecore AS7726-32X SKU: IPBASE, PLUS Ports: 32 x 40/100 GE QSFP28 Switching capacity: 3.2 Tbps Switching chipset: Trident3-X7 	Edgecore AS9716-32D SKU: IPBASE, PLUS Ports: 32 x 400 GE QSFP-DD Switching capacity: 12.8 Tbps Switching chipset: Tomahawk3 	Edgecore AIS800-64D  SKU: IPBASE, PLUS Ports: 64 x 800 GE QSFP-DD Switching capacity: 51.2 Tbps Switching chipset: Tomahawk5 
UfiSpace S6301-56ST SKU: MGMT, IPBASE Ports: 48 x 10/100/1000Base-T RJ45; 8 x 1/10 GE SFP+ Switching capacity: 128 Gbps Switching chipset: Trident3-X2 	Edgecore AS5835-54X SKU: IPBASE, PLUS Ports: 48 x 1/10 GE SFP+; 6 x 40/100GE QSFP28 Switching capacity: 1.08 Tbps Switching chipset: Trident3-X5 	Edgecore AS7712-32X SKU: IPBASE, PLUS Ports: 32 x 40/100 GE QSFP28 Switching capacity: 3.2 Tbps Switching chipset: Tomahawk 	Edgecore AS7816-64X SKU: IPBASE, PLUS Ports: 64 x 40/100 GE QSFP28 Switching capacity: 6.4 Tbps Switching chipset: Tomahawk2 	Edgecore AS9736-64D SKU: IPBASE, PLUS Ports: 64 x 400 GE QSFP-DD Switching capacity: 25.6 Tbps Switching chipset: Tomahawk4 
<div> <div>128 Gbps</div> <div>1.08 – 2.0 Tbps</div> <div>3.2 Tbps</div> <div>6.4 - 12.8 Tbps</div> <div>25.6 – 51.2 Tbps</div> </div>				

Relevant Links

DATASHEET

FEATURE MATRIX

HARDWARE
COMPATIBILITY LIST

OCNOS-DC
CONFIGURATION GUIDE

Contact us today to learn more about the OcNOS Data Center product.

Phone: +1-877-699-3267 | Email: sales@ipinfusion.com