OcNOS Data Center (DC)

August 2024

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 Operation System (OcNOS) can be used to build both Layer-3 and Layer-2 Data Center fabric as it provides a rich set of control plane features, providing robust quality, facilitating AI 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.
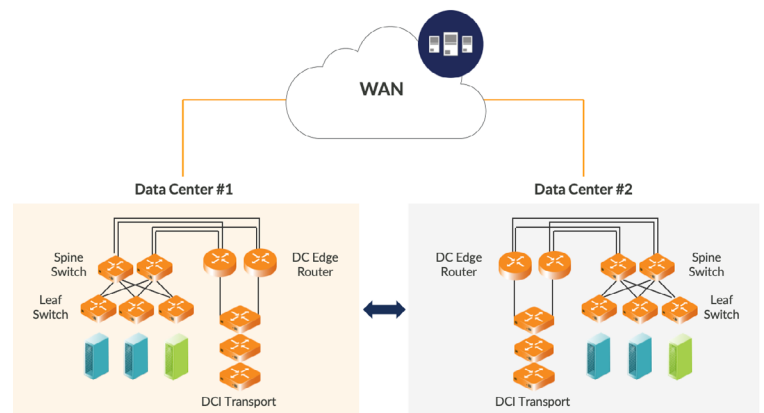
OcNOS-AGGR is used as DC Edge Router
OcNOS-RON is used used for DCI Transport

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

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
- 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, L2 and L3 MLAG, xSTP and Data Center Bridging (DCB)

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

Complete Virtual Extensible LAN (VxLAN) – Static VxLAN and EVPN-VxLAN, IRB, E-Tree, Overlay ECMP, QoS, Single-homing and Multi-homing

ip infusion

Multicast Features – IPMv4, PIMv6, IGMP and MLD

The Most Comprehensive Quality of Service – 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 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
- RDMA over Converged Ethernet v2 (RoCEv2)
- Priority Flow Control (PFC)

OcNOS Data Center Hardware Platforms

The following hardware platforms are supported.

Edgecore AS4625-54T New
SKU: MGMT
Ports: 48 x 10/100/1000Base-T RJ45; 6 x 1/10G SFP+
Switching capacity: 128 Gbps
Switching chipset: Trident3-X2

Ufispace S9110-32X New
SKU: IPBASE, PLUS
Ports: 32 x 40/100 GE QSFP28
Switching capacity: 3.2 Tbps
Switching chipset: Trident3-X7

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 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

Edgecore AS7726-32X
SKU: IPBASE, PLUS
Ports: 32 x 40/100 GE QSFP28
Switching capacity: 3.2 Tbps
Switching chipset: Trident3-X7

Edgecore AS7816-64X
SKU: IPBASE, PLUS
Ports: 64 x 40/100 GE QSFP28
Switching capacity: 6.4 Tbps
Switching chipset: Tomahawk2

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

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

Edgecore AS7712-32X
SKU: IPBASE, PLUS
Ports: 32 x 40/100 GE QSFP28
Switching capacity: 3.2 Tbps
Switching chipset: Tomahawk

Edgecore AS9716-32D
SKU: IPBASE, PLUS
Ports: 32 x 400 GE QSFP-DD
Switching capacity: 12.8 Tbps
Switching chipset: Tomahawk3

| 128 Gbps | 1.08 Tbps | 1.8 - 2.0 Tbps | 3.2 Tbps | 6.4 - 12.8 Tbps |

Relevant Links

| DATASHEET | FEATURE MATRIX | HARDWARE COMPATIBILITY LIST | OCNOS-DC CONFIGURATION GUIDE |

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

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