



NETWORK OPERATING SYSTEM FOR DISAGGREGATED ROUTERS

NETWORK

OPERATING SYSTEM FOR DISAGGREGATED ROUTERS

With average traffic CAGR growth of 50% and the new applications and networks expansion (non linear Video, 5G deployments), all networks must expand while keeping costs under control.

NETWORK APPLICATIONS

Mobile Backhaul
Internet Peering
Core
Edge Routing
Datacenter Gateway

IP ROUTING AT SCALE

Suited for internet traffic routing
on Tier1/Tier2 Carrier Networks

OPEN ARCHITECTURE

Any Broadcom-based Hardware
Northbound interface for SDN

A Disruption in the Market

Until recently, the only way for a vendor to provide a carrier grade router was to develop a proprietary, vertically integrated router that includes its own ASICs, hardware and software.

The barriers to entry for new vendors were extremely high due to the high cost of developing a vertically integrated router. As a result, only a small number of incumbent vendors share this market, locking-in Communication Service Providers into expensive solutions with little innovation.

Exaware enables Internet Service Providers, Mobile Networks and Telecom Carriers to benefit from the Software and Hardware disaggregation model (white-box router), which disrupts the economic value chain of the networking industry.

Filling the missing link between merchant-based Hardware and customer requirements, Exaware provides the necessary scale and feature set for the most demanding networks.

Built with the customer in mind, Exaware allows you to adapt your network to fast-changing conditions, by adding a layer of programmability, to enable new services that your end-users can benefit from instantaneously.

Without any compromise on security and performance, Exaware enables a brand new economic model for your network.

EXAWARE BENEFITS



Reduced CAPEX

With Exaware, operators can effortlessly use disaggregated routers across the network, while reducing upfront network investment dramatically in comparison to traditional proprietary IP routers



Carrier-Grade

Our router was built from the ground up with carrier scale in mind, to meet current and future demanding requirements and applications
Our longstanding experience in the industry serves our customers



On-Demand Bandwidth Growth

Exaware gives you the power and freedom to scale without limits, thanks to our NOS Distributed Chassis Architecture.



Lower OPEX

Built for network and service automation through Yang and Netconf interfaces, Exaware's Open API solution reduces the need for operational and maintenance staff.



Scalability

Exaware NOS enables seamless scaling, no matter your application, while meeting your network service demands effortlessly.

FLEXIBLE

SOFTWARE ARCHITECTURE

Exaware Operating System has been designed from the ground-up with Telco resilience in mind:

Fault isolation: each application runs as a separate entity, without impact on the others.

Memory protection: hardware components are managed through memory-protected user spaces, to ensure faultless operations and service continuity

Open API for management and HW abstraction

**Service
Orchestration**

CFEngine

signal fx



Nagios
Log Server™

puppet

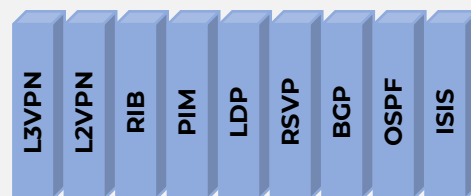
Routing Control Plane



Data Plane



Management Plane



**Infrastructure services
Distribution, High Availability**

ONIE

Open Network Linux - ONL

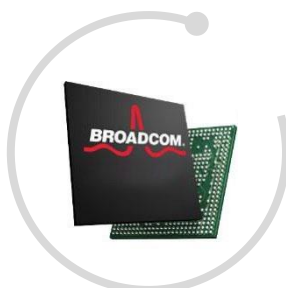
HAL

End-To-End Routing Solution

Exaware NOS



White Box



APPLICATIONS



MOBILE BACKHAUL:

With the shift to 5G, all mobile backhaul require stable, feature-rich IP/MPLS solutions, together with advanced IEEE1588 and SyncE solutions.



INTERNET PEERING:

High scale BGP, RIB and FIB, routing policy language and interoperability.



PE SOLUTIONS:

Feature-rich, L3VPN and L2VPN environment



CORE ROUTING:

high BW, advanced routing control



DATACENTER GATEWAY:

Support all services and connectivity options, including VPNs with your upstream service provider.

FEATURES

Routing

- IPv4, IPv6 Dual stack
- eBGP, iBGP at scale
- MP-BGP
- BGP signaling for L3VPN
- 6PE and 6VPE
- Label Unicast
- OSPFv2
- OSPFv3
- IS-IS – IPv4/IPv6, Multi topology
- Route distribution across protocols
- PIM-SSM
- IGMPv2/V3

MPLS

- RSVP-TE
- LDP
- IGP shortcut
- OSPF-TE
- ISIS-TE

Services

- L3VPN
- Inter-AS L3VPN
- VPWS
- VPLS
- Internet Access

Management

- Hierarchical, commit based CLI
- Netconf
- SSH
- Telnet
- Out-of-band and in band management
- SNMPv2/V3
- RBAC
- AAA/TACACS+
- NTP
- Syslog
- Rich, Hierarchical Policy Language
- Enhanced logging

Fast Convergence

- BFD
- BGP
- IS-IS/OSPF
- MPLS-TE
- LDP
- Static-Route
- MPLS-FRR
- IP-LFA
- Next-hop tracking

Infrastructure

- ONIE
- Standard ONL
- OpenBMC

Data Path Feature

- VLAN
- QinQ for all services
- BGP-PA
- LAG with fast LACP
- ABF
- MPLS FRR
- IP-LFA
- Hierarchical FIB
- BGP-PIC Core/Edge
- Two level load-balancing
- VRF at scale

Security

- Data Path ACL
- Control Plane ACL
- Management VRF Separation
- HW policing for CPU traffic
- MD5 for routing protocols
- BGP FlowSpe

Timing

- SyncE
- IEEE1588 – TC, BC

High Availability

- Process restart
- Graceful restart for all routing protocols
- ISSU
- Stateful switchover
- HW Hot Insertion

QoS

- Hierarchical Shaping
- PORT/VLAN rate control
- 2-rate/3-colors policers
- MEF hierarchical policers
- WRED
- Weighted and strict priority queues
- Minimum latency queues
- 8 Queues per port/VLAN

