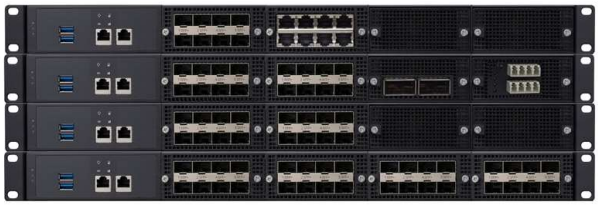
EDGE Core Switch

EDGE Core Switched (ECS) Series

The EDGE Core Switch (ECS) is a high-performance x86 network appliance engineered for carrier, data center, and campus core deployments. Built on a modular 4-slot NIC architecture, the platform supports up to 32 ports across any mix of 1GbE fiber, 1GbE copper, 10GbE, 40GbE, and 100GbE — configurable per slot at order time or field-upgradable after deployment.



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EDGE Core Switch (ECS)

bare-metal data center switches deliver non-blocking performance, open networking flexibility, and high-density scalability for spine, leaf, and top-of-rack (ToR) deployments.

ECS appliance engineered with 4 swappable NIC Modules and up to 32 ports.
8×1G Fiber - 8×1G Copper - 4×10G - 2×40G - 2×100G

Key Features

EDGE Core Switch Features

Layer 2 Features

- *VLAN 802.1Q, 802.1ad QinQ, port-based, protocol-based, MAC-based, voice VLAN, management VLAN.*
- *Spanning Tree — 802.1D STP, 802.1w RSTP, 802.1s MSTP.*
- *Link Aggregation — 802.3ad LACP (up to 16 groups, 8 ports per group).*
- *MC-LAG — Multi-chassis LAG for active-active redundancy.*
- *Multicast Snooping — IGMP v1/v2/v3, MLD v1/v2 snooping.*
- *Storm Control — broadcast / multicast / unknown-unicast, per port.*
- *Loop Detection — per-VLAN, per-port.*
- *Port Mirroring — 1-to-1, many-to-1, RX/TX/both.*
- *ERPS Ring — ITU-T G.8032 fast protection switching.*
- *Bonding — active-backup, balance-tcp, balance-xor, 802.3ad (LACP).*

Layer 3 / Routing

- *Unicast Routing — BGP, OSPFv2/v3, IS-IS, RIP, RIPng, static, PBR.*
- *MPLS & Segment Routing — MPLS, SR-MPLS, SRv6, LDP, RSVP-TE, L3VPN, VPLS, VPWS.*
- *Multicast — IGMPv2/v3, PIM-SM, PIM-SSM, MSDP.*
- *VRF Instances — up to 4,096 with independent routing tables.*
- *BGP — multipath, add-path, route reflector, RPKI, EVPN, segment routing extensions.*
- *Advanced routing engine, fully featured BGP, OSPF, IS-IS, BFD stack.*

VPN Protocols

- *VXLAN, GENEVE, EVPN, GRETAP, 6in4 — overlay and tunneling for DC fabrics.*
- *IPsec / IKEv2 — site-to-site, hub-and-spoke, DMVPN, with Intel QAT hardware offload.*
- *WireGuard — modern high-speed encryption, up to 16,000 peers.*
- *OpenVPN — AES-256-GCM, TLS 1.3, up to 5,000 concurrent clients.*
- *L2TP, GRE, IPIP, VTI — legacy tunnel protocols for interoperability.*

Security Features

- *Stateful Firewall — zone-based, IPv4 / IPv6*
- *NAT — SNAT, DNAT, 1:1, port-forward, NPTv6, NAT64.*
- *QoS & Traffic Shaping — HTB, FQ-CoDel, SFQ, TBF, DSCP marking / remarking.*
- *Access Control — 802.1X (port-based, MAC-based), RADIUS, TACACS+.*
- *ACLs — L2 / L3 / L4, per-port, per-VLAN.*
- *DHCP Snooping — with option 82, dynamic ARP inspection (DAI), IP source guard.*
- *DoS Prevention — SYN flood, ICMP flood, port scan, CoPP (control plane policing).*
- *Security Hardening — RBAC, SSH key-only, RPKI for BGP.*
- *High Availability — VRRP / VRRPe, conntrack sync, MC-LAG, config sync.*

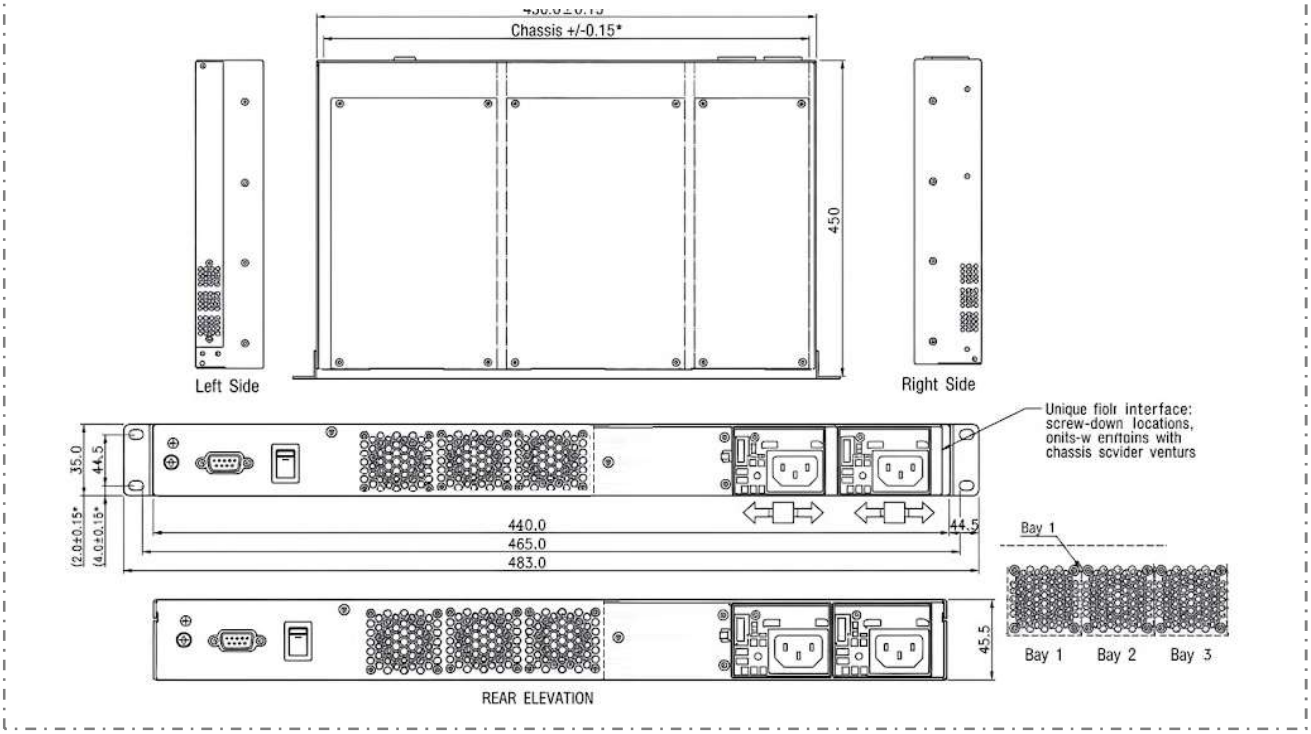
Management & Automation

- *REST API — HTTPS / JSON, NETCONF (YANG models)*
- *SNMP — v1, v2c, v3.*
- *Automation — Ansible collection, Terraform provider, Cloud-init, Python hooks.*
- *Monitoring — sFlow, NetFlow v9, IPFIX, syslog (RFC 3164 / 5424), Prometheus exporter.*
- *Network Services — DHCP / DHCPv6 server + relay, DNS forwarding, NTP, RADIUS client, TACACS+.*
- *Configuration Management — easy-to-use cisco-like CLI, versioned config with rollback.*

Switching and Routing Performance

L2/L3 Forwarding (64B packets)	*Up to 80 Mpps aggregate (depends on NIC loadout).*
L2/L3 Throughput (1518B)	*Up to 800 Gbps aggregate (with 4 × 2x100G modules).*
Stateful Firewall Throughput	*Up to 200 Gbps (zone-based, VPP-accelerated).*
NAT Throughput (SNAT, VPP)	*Up to 180 Gbps.*
IPsec AES-256-GCM Throughput	*Up to 80 Gbps (with Intel QAT hardware offload).*
WireGuard Throughput	*Up to 60 Gbps.*
Concurrent Firewall Sessions	*Up to 20,000,000*
New Sessions / second	*Up to 650,000*
BGP Routes (RIB)	*Up to 4,000,000 (full Internet table, multi-peer).*
MAC Address Table	*1,000,000+ entries.*
VRF Instances	*Up to 4,096*
Active NAT Translations	*Up to 200,000*
IPsec VPN Tunnels	*Up to 10,000*
WireGuard Peers	*Up to 16,000*
VRF Instances	*Up to 4,096*
Throughput peer core	*40+ Mpps per core (32 cores up to 1.28 TB)*
Richness	*High. Modular graph nodes for L2, L3, NAT, ACLs, and VPNs.*

Dimensions



Hardware Overview	
Model Name	*EDGE-CORE-32*
Switch Architecture	*x86 software-defined switch with DPDK/VPP accelerated data plane*
Network OS	*EDGE Network LTS*
Form Factor	*1U 19-inch rack-mount appliance (short-depth option available)*
Dimensions (W × D × H)	*440 × 450 × 44 mm*
Weight (without packaging)	*8.5 kg (with 4 NIC modules installed)*
Rack Mount Kit	*Included (rails + front-mount ears)*
Processor	*Intel Xeon series, 22-core, 2.3 GHz*
Memory (default / max)	*32 GB DDR4 ECC / 128 GB (2 DIMM slots)*
Storage	*2 × 240 GB NVMe SSD (RAID 1, hot-swap) — OS image + config + logs*
Cooling	*4 × 40 mm hot-swap fans, dual ball-bearing, N+1 redundancy*
Power Supply	*2 × 500W 1+1 redundant, hot-swap, 80 PLUS Platinum*

Network Ports — Modular Slot Architecture.

The front panel provides 4 swappable NIC module slots. Each slot accepts one module at a time. Modules are hot-pluggable (with admin acknowledgment) and auto-detected by EDGE-Network on insertion. The maximum port count is 32 (4 × 8-port copper or fiber modules); the maximum aggregate bandwidth is 800 Gbps (4 × 2-port 100G modules).
Fixed Ports (Always Present), Swappable NIC Modules (4 Slots) Each of the 4 slots accepts one of the following modules. Modules can be mixed and matched per slot at order time or field-upgraded later without tools (captive thumbscrews only).

8× 1GbE SFP (Fiber)
SKU: EDGE-NIC-8x1G-SFP
8 ports of 1GbE fiber via SFP transceivers. Ideal for access-layer uplinks, branch aggregation, and FTTH deployments.
Chipset: *Intel 82580EB*
Speed: *1 Gbps per port*

8× 1GbE RJ45 (Copper)
SKU: EDGE-NIC-8x1G-RJ45
8 ports of 1GbE copper RJ45. For legacy copper distribution, in-rack server access, and management networks.
Chipset: *Intel 82580EB*
Speed: *10/100/1000 Mbps per port*

4× 10GbE SFP+
SKU: EDGE-NIC-4x10G-SFP
4 ports of 10GbE via SFP+ transceivers. Aggregation uplinks for access switches and DC spine connections.
Chipset: *Intel 82599ES*
Speed: *10 Gbps per port*

2× 40GbE QSFP+
SKU: EDGE-NIC-2x40G-QSFP
2 ports of 40GbE via QSFP+ transceivers. High-bandwidth spine uplinks and DC fabric interconnects.
Chipset: *Intel XL710 / Broadcom*
Speed: *40 Gbps per port*

2× 100GbE QSFP28
SKU: EDGE-NIC-2x100G-QSFP
2 ports of 100GbE via QSFP28 transceivers. Spine-to-spine, DCI, and carrier-grade interconnects.
Chipset: *Mellanox ConnectX-6 / Intel E810*
Speed: *100 Gbps per port*

Empty Slot Cover
SKU: EDGE-NIC-BLANK
Passive blanking module for unused slots. Maintains airflow and EMI shielding.
Chipset: *N/A*
Speed: *N/A*

Modular Switch — Recommended Configurations					
Configuration Name	**Slot Loadout**	**Port Mix**	**Ports**	**Aggregate BW**	**Typical Use Case**
High-Density Copper Access	*4 × 8x1G RJ45*	*32 × 1GbE copper*	*32*	*32 Gbps*	*Campus access, wiring closet aggregation, legacy server racks*
High-Density Fiber Access	*4 × 8x1G SFP*	*32 × 1GbE fiber*	*32*	*32 Gbps*	*FTTH aggregation, branch uplinks, metro Ethernet*
Mixed Access + 100G Spine	*2 × 8x1G SFP + 2 × 2x100G QSFP28*	*16 × 1GbE + 4 × 100GbE*	*20*	*416 Gbps*	*DC edge with 100G spine uplinks and 1G access ports*
Aggregation + 40G Spine	*2 × 8x1G RJ45 + 2 × 2x40G QSFP+*	*16 × 1GbE + 4 × 40GbE*	*20*	*176 Gbps*	*Campus aggregation with 40G DCI uplinks*
All-100G Spine	*4 × 2x100G QSFP28*	*8 × 100GbE*	*8*	*800 Gbps*	*DC spine, carrier interconnect, high-bandwidth DCI*
10G + 100G Mixed	*2 × 4x10G SFP+ + 2 × 2x100G QSFP28*	*8 × 10GbE + 4 × 100GbE*	*12*	*480 Gbps*	*DC leaf-spine with 100G uplinks and 10G server access*
Branch / Edge	*1 × 8x1G RJ45 + 1 × 8x1G SFP + 2 × 2x40G QSFP+*	*8 + 8 + 4 ports*	*20*	*176 Gbps*	*Regional edge router with copper access, fiber uplink, 40G DCI*

Power and Environmental

Power Supply	*2 × 500W 1+1 redundant, hot-swap, 80 PLUS Platinum*
Input Voltage	*100–240 VAC, 50/60 Hz autosensing*
Max Power Consumption	*450 W (full load, all NIC modules active)*
Idle Power Consumption	*180 W (no NIC traffic)*
Thermal Dissipation (max)	*1,535 BTU/hr*
Cooling Fans	*4 × 40 mm hot-swap, N+1 redundant, auto-speed*
Acoustic Noise (typical)	*52 dBA at 25 °C ambient*
Operating Temperature	*0 to 40 °C (32 to 104 °F)*
Storage Temperature	*–40 to 70 °C*
Operating Humidity	*10% to 90% non-condensing*

EDGE CORE SWITCH

100GbE
Local Network Connectivity
QSFP28

< 1ms
Achieving an Intra-Facility
Latency

99.99%
Platform Availability
High Redundancy

1U/2U
flexible rackmount
architecture

Ordering Information

Base SKU	*EDGE-CORE-32 (base 1U appliance, 32 GB RAM, 2 × 240 GB NVMe, no NIC modules)*
Standard Configuration	*EDGE-CORE-32-STD (base + 2 × 8x1G RJ45 + 2 × 4x10G SFP+)*
DC Aggregator Config	*EDGE-CORE-32-DC (base + 2 × 4x10G SFP+ + 2 × 2x100G QSFP28)*
Spine Config	*EDGE-CORE-32-SPN (base + 4 × 2x100G QSFP28)*
Optional NIC Modules	*EDGE-NIC-8x1G-SFP, EDGE-NIC-8x1G-RJ45, EDGE-NIC-4x10G-SFP, EDGE-NIC-2x40G-QSFP, EDGE-NIC-2x100G-QSFP28, EDGE-NIC-BLANK*
Optional Spare PSU	*EDGE-CORE-PSU-500W*
Hardware Warranty	*3 years return-to-base (standard), optional 3-year on-site NBD*
EDGE-Network LTS Subscription	*EDGE-Core-SUP-1Y (1-year per-device, 24x7 TAC)*
EDGE-Network LTS Support	*3 years from GA, security advisories for full term*
Hardware Refresh Cycle	*5–7 years (typical hardware lifecycle)*
Professional Services	*Architecture review, DC fabric design, BGP tuning, automation workshops*

Certifications and Compliance

- *Safety — CE, UL / cUL 60950-1, EN 60950-1, CB Scheme*
- *EMC — FCC Part 15 Class A, CE EMC, EN 55032 Class A, EN 55024*
- *RoHS / REACH — RoHS 2 compliant, REACH compliant*
- *IEEE Compliance — 802.3, 802.3u, 802.3ab, 802.3x, 802.3az, 802.3ad, 802.3ba, 802.3bj, 802.3bs, 802.1Q, 802.1ad, 802.1D, 802.1w, 802.1s, 802.1AB, 802.1X*

LANEX

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