

800G ETHERNET LEAF SWITCH WITH HBM · NCP-38E

DriveNets 5301R

Ethernet leaf switch with 18 × 800G network and 20 × 800G fabric interfaces, powered by Jericho3 with integrated HBM — building single-hop, non-blocking FSE clusters for AI workloads.

14.4Tbps

FULL-DUPLEX ROUTING CAPACITY

18 × NIF + 20 × FIF 800G

Jericho3 superset + HBM

Up to 32K GPUs



OVERVIEW

DriveNets 5301R is an Ethernet leaf switch featuring 18 × OSFP 800G network interface (NIF) ports and 20 × OSFP 800G fabric interface (FIF) ports. Powered by Broadcom's Jericho3 superset ASIC with integrated High Bandwidth Memory (HBM), it delivers enhanced throughput and reduced latency for AI/ML workloads, operating standalone or clustered with the DriveNets 9300F spine cell-switch to form a scalable Fabric-Scheduled Ethernet cluster. The 5301R delivers 14.4 Tbps of full-duplex routing and switching capacity, supporting up to 800 GbE per interface with configurable 2 × 400 GbE operation. The Fabric-Scheduled Ethernet architecture creates a single-hop, nonblocking Ethernet fabric — flexible, scalable, and capable of interconnecting up to 32K GPUs — delivering a congestion-free, predictable, low-tail-latency environment that maximizes workload efficiency and minimizes Job Completion Time (JCT).



Interfaces

18 × 800G NIF and 20 × 800G FIF

Up to 800GbE line-rate ·
configurable 2 × 400GbE

OSFP pluggable optics



General

Optimized for AI/ML applications ·
disaggregated architectureHardware-based link failover · deep
buffers · 1588v2 PTP Class C

Jericho3 ASIC with integrated HBM



Security, Power & Cooling

MacSec · Platform Firmware
Resilience (PFR)

1 + 1 redundant hot-pluggable PSUs

3 + 1 redundant hot-swappable fans

Full technical detail

Ports

Network interfaces	18 × OSFP800
Fabric interfaces	20 × OSFP800
Serial console	1 × RJ-45 / USB Type-C combo
Management	1 × RJ-45 100/1000BASE-T
SDN management	2 × SFP+
In-band management	2 × SFP28
Storage	1 × USB 3.0 Type-A
Reset	1 × reset button

Clocking & Timing

Pulse	1 × 1PPS I/O DIN
Clock I/O	1 × 10MHz I/O DIN
Time of day	1 × TOD port
GNSS	1 × GNSS antenna

Performance

Full-duplex switching	14.4 Tbps
Packet throughput	5400 Mpps processing rate

Key Components

Switch silicon	Broadcom Jericho3 superset BCM88860
CPU	Intel COMe Ice Lake-D D-1734NT 8C
Memory	64GB DDR4 (2 × 32GB) with ECC
Storage	NVMe M.2 SSD 240G (480G optional)
BMC / PFR	AST2600 / AST1060

Physical & Environmental

Dimensions (H×W×D)	87 × 440 × 648.2 mm
Weight	21 kg
Fans	3 + 1 redundant, hot-swap
Operating temp	0°C – 40°C (32°F – 104°F)
Storage temp	–40°C – 70°C (–40°F – 158°F)
Operating humidity	5% – 85% non-condensing

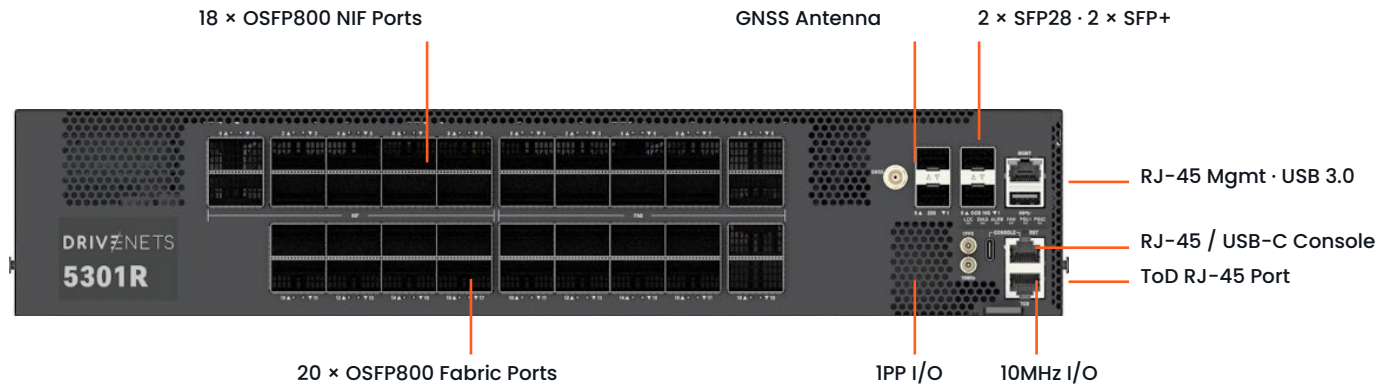
Power

PSUs	1 + 1 redundant, load-sharing, hot-swap VAC/VDC
Input voltage	200–240 VAC · –48 to –60 VDC
Typical power	782 W (w/o optics)
Maximum power	1615 W (with 800G 14 W optics)

LEDs

NIF / FIF / SFP ports	Link status, activity, rate
Ethernet mgmt port	Link status, activity
System	Diagnostic, locator, alarm, PSU, fan

Front panel



REGULATORY COMPLIANCE

Certifications

EMI

CE Mark · EN55032 Class A ·
EN55024/35
EN 301 489-1 / -19 · EN 303413
FCC Part 15 Subpart B Class A · EN
300 386

Safety

UL 62368-1 Ed.3 / UL 60960
IEC/EN 60950-1
IEC/EN 62368-1 Ed.3

Environmental

ETSI 300 019-2-1 T1.2 (storage) · -2-2
T2.3 (transport)
EN 300 019-2-3 Class 3.2 (vibration,
bump)
Acoustic ETS 300753 · RoHS-6

14.4 Tbps

ROUTING CAPACITY

38 × 800G

OSFP PORTS (NIF + FIF)

5400 Mpps

PACKET THROUGHPUT

32K GPUs

IN ONE CLUSTER

DRIVENETS

DriveNets builds high-performance networking solutions for large-scale AI infrastructure and service-provider networks. DriveNets' Network Cloud powers production networks at global operators such as AT&T and Comcast, while its AI Fabric solutions optimize the performance and time to first token (TTFT) in multi-vendor AI environments at foundation model labs, NeoClouds, and enterprises. DriveNets combines high-performance networking, end-to-end automation, and full-stack AI cluster optimization to remove network bottlenecks, maximize GPU utilization, accelerate AI cluster deployments, and improve token economics. Learn more at www.drivenets.com