DRIVENETS

DATA SHEET

FABRIC-SCHEDULED ETHERNET LEAF SWITCH · NCP-38E

DriveNets 5301R

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.

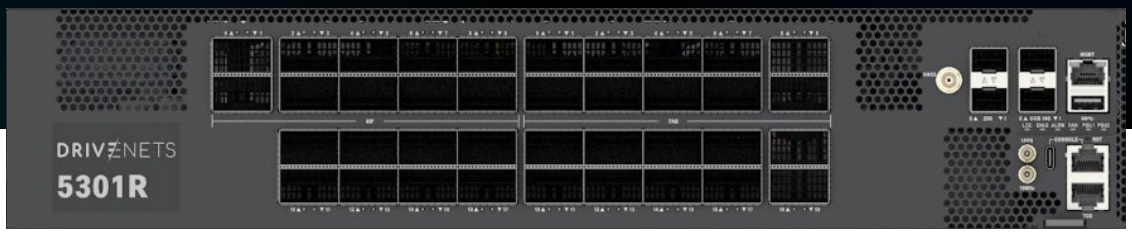
14.4 Tbps

FULL-DUPLEX ROUTING CAPACITY

18 × NIF + 20 × FIF 800G

Jericho3 superset + HBM

Up to 32K GPUs



OVERVIEW

DriveNets 5301R is a Fabric-Scheduled 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 fabric 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 FSE architecture creates a single-hop, non-blocking 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 architecture

Hardware-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

HARDWARE SPECIFICATION

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

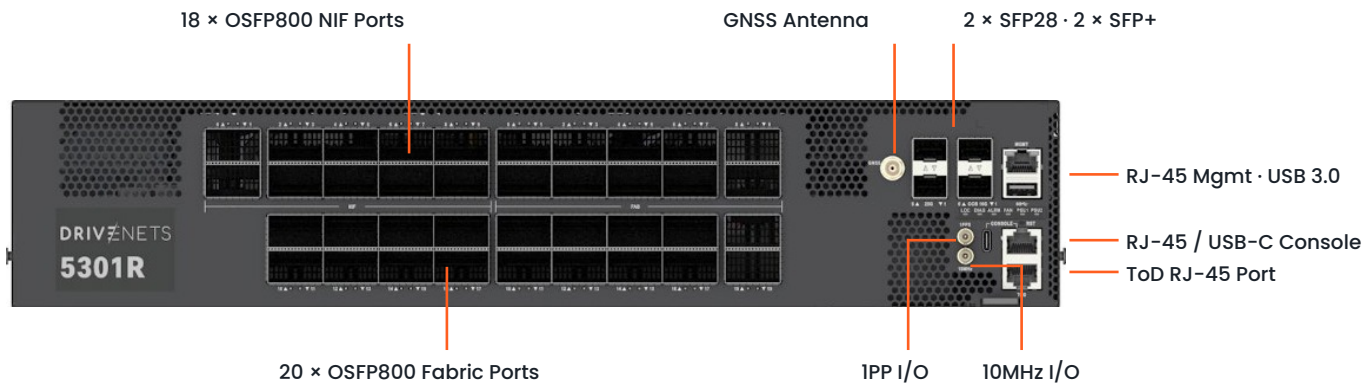
PSUs	**1 + 1 redundant, load-sharing, hot-swap VAC/VDC**
Input voltage	**200–240 VAC · -48 to -60 VDC**
Typical power	**782 W (w/o optics)**
Maximum power	**1615 W (with 800G 14 W optics)**

LEDs

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

INTERFACE OVERVIEW

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**

September 2026
DN-5301R