APS2156DG

Advanced Programmable Switch

APS Networks

The APS Networks® APS2156DG switch is a TOR switch for enterprise networks or security solutions using the P4 programming language. The unit enables enterprise L2/L3 switching across the 48x SFP28 ports and the 8x QSFP28 at line rate. The APS2156DG is designed to support an extended user port speed of 100Mb/s and 1000Mb/s as well as the native 10/25/40/50 and 100Gb/s. Combined with internal CPU Ethernet connectivity, 4-core CPU processor and optional PTP, the APS2156DG is ideal for the development of P4 enabled solutions whilst providing connectivity to servers and up-link networks.

Benefits

- Fully programmable P4 architecture
- Dual pipeline 2.0Tb/s throughput
- PTP Time Synchronization (optional)
- Supports 10/25/40/50/100Gb/s data rates
- Extended Port Speeds - 100/1000Mb/s
- Internal CPU to network ASIC connectivity
- Hot Swappable PSU's & Fan units

Designed on Open Frameworks

APS Networks® APS2156DG is designed around open framework principles. The BMC is designed using the RunBMC Framework from Open Compute Project (OCP) running OpenBMC software whilst the APS Board Support Package enables the development of P4 applications using the Intel® P4 Studio SDE.

Use Cases

- Enterprise Networking: Top of Rack layer 2/3 P4 programmable network switching
- Security applications: Network Packet Broker/ Layer 4 Load Balancer / P4 Firewall
- Media & Broadcast Seamless switching edge switch

Main Features

- Intel Tofino 1 – 2.0Tb/s network ASIC
- 4 core Intel Xeon D-1700 CPU
- 24 Ports 0.1/1/10Gb/s, 24 Ports 10/25Gb/s
- 8 Ports 100Gb/s
- Open BMC Management
- PTP Optional
- Quick fit rack slides

Why APS Networks?

Security by Design	Made in Europe	PTP Timing
Programmable	Modular	Innovative

Model	APS2156DG
Network Ports	48x SFP28 & 8x QSFP28
Max. 100Gb Ports	8
Max. 50Gb Ports	16
Max. 40Gb Ports	8
Max. 25Gb Ports	56
Max. 10Gb Ports	80
Max. 1Gb Ports	24
Max. 100Mb Ports	24 (SGMII Enabled SFP's)
Management Port	1x 1Gb RJ45 (100/1000Mb/s)
SDN Controller / Control Plan Ports	2x 1Gb SFP Ports
USB	1
Network ASIC	Tofino – 2.0D BFN-T10-032D-020-B0
Throughput	2.0Tb/s
Packets per Second	Up to 3.0Bpps
Latency	From 600ns
ASIC Packet Buffer	20MB
ASIC Pipelines	2
Hot Swap PSU	2 (1+1 redundant)
Hot Swap Fans	6 (N+1 redundant)
Typical Power Draw	275W
Max. Power Draw	700W
Max. PSU	800W Titanium (AC)
Acoustics	TBD
MTBF	TBD

Software	
Support Software (OS)	Debian / Ubuntu
Supported Applications	SONiC / STRATUM
SDE	Intel® P4 Studio

Physical	
Rack Units	1U
Dimensions (WxHxD) cm	46 x 4.3 x 48
Weight	Approx. 11 kg
Rack Mount	Rack rail sliding solution
Hardware Warranty	3 year return to manufacturer

CPU

Intel® XEON D-1713NT (quad-core)

- 32G RAM
- 256GB SSD
- Trusted Platform Module (TPM) 2.0
- Optional SSD (1TB)

Power Supply	Options
AC (Front to Back Cooling)	90Vac - 264Vac
AC F/B Inlet Socket	IEC 60320 C14
AC (Back to Front Cooling)	90Vac - 264Vac
AC B/F Inlet Socket	IEC 60320 C16
AC Input Frequency	47Hz - 63Hz
AC Efficiency	96%
DC (Front to Back cooling)	-72Vdc to -40Vdc
DC (Back to Front cooling)	-72Vdc to -40Vdc
DC Efficiency	92%

Environment	
Operating Temperature	0°C - 40°C
Non-Operating Temperature	-20°C - 70°C
Humidity	5% to 95% (non-condensing)
Altitude	0 – 2000m (0 – 6000ft)

Optional Variant	PTP Board (Precision Time Protocol)