Edge-corE NETWORKS

HIGH-PERFORMANCE, PROGRAMMABLE 400G & 100G

Switch Solutions for Data Center and Cloud-based Applications

intel IoT Solutions Alliance

WWW.EDGE-CORE.COM

Why Programmable Matters?

There have been discussions about the programmability of the data center for a long time, where IT managers can more holistically manage their data center switches and other networking components.

The ever-increasing rise of cloud applications and services, the expanding use of video in many applications, all adds to a high volume of data. And, all this data traffic is built on data centers.

Compared to standard fixed-function switches, operators are looking for flexible programmable switches that allow a greater control of the data center. Programmable switch ASICs not only can customize the behavior of switches, but also exploit unique characteristics of data centers to scale.

The Benefits of Programmable

Programmable switch ASICs deliver complete customized flexibility without significantly sacrificing performance, increasing power, or adding to costs. This enables a more efficient packet pipeline; users are also able to customize the behavior of physical switches to meet their needs.

Programmable switches help to build scalable infrastructure services and realize the benefits of automation. Meanwhile, low latency, high throughput, and lower costs are all benefits that operators are chasing.

The 400G Programmable DCS810 Switch

Edgecore has launched the industry's first 12.8Tb/s P4-programmable open switch on the market – the DCS810. The switch is based on the latest Intel Tofino 2 chipset with full programmable switching ability, allowing network architects to replace legacy fixed-function switches with P4-programmable switches and deliver up to 12.8 Tb/s throughput. Six redundant, hot swappable fan modules and two AC power supplies increase the reliability and capability, enabling the switch to support hyperscale, cloud, and service provider environments with higher-bandwidth.

The DCS810 is compatible with SONiC open source network software, and supports Edgecore's version of SONiC- ecSONiC. Edgecore offers SONiC-based solutions that have been thoroughly tested and hardened to ensure production-readiness on Edgecore open networking platforms. Each ecSONiC release is based on the Community SONiC release and includes fixes and enhancements to ensure customers are confident that the branch used for their deployment is robust and supported.

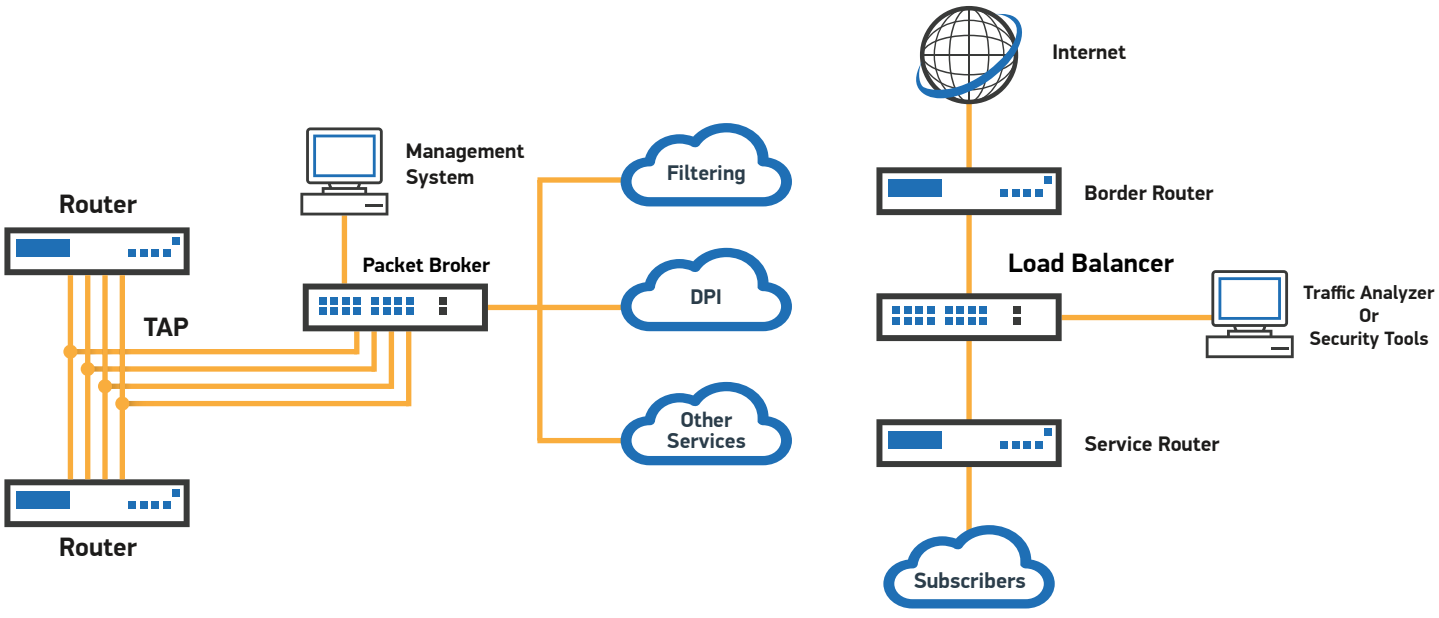
Breakthrough Performance Design For 400G

Compared to the previous generation, the Tofino 2 chipset provides breakthrough performance and more flexibility for users:

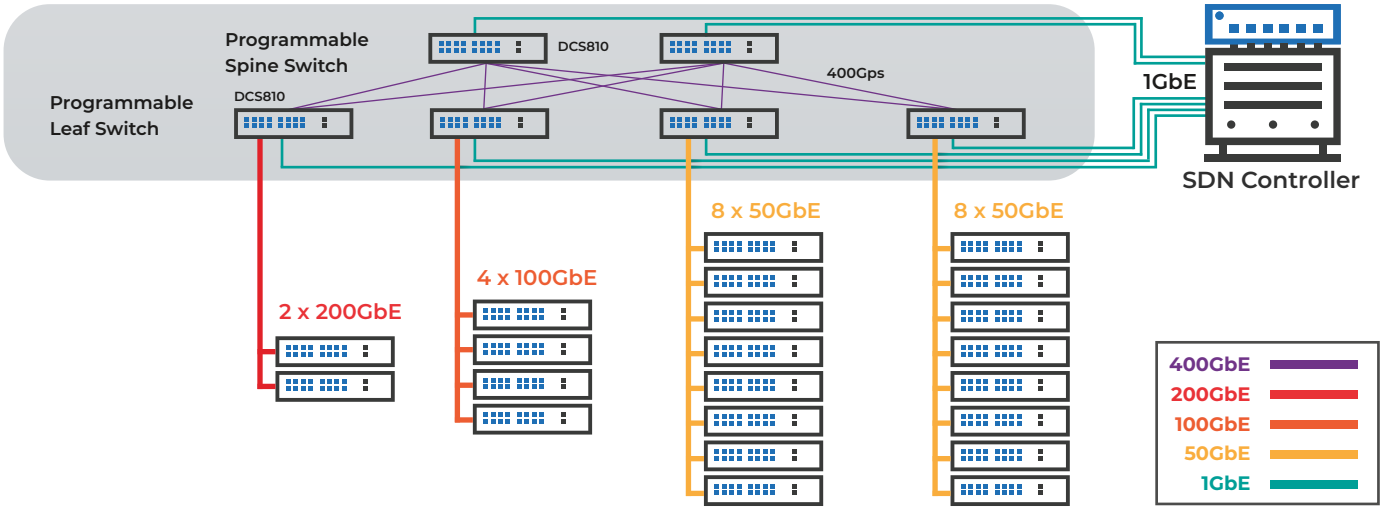
- Delivers 32 x 400G Ethernet ports on a single chip for hyperscale data centers needing 400G
- Delivers orders-of-magnitude power and latency savings by supporting up to 256 x 10/25/50GE ports on a single chip
- Provides full P4 programmability and supports large table sizes for routing, tunnels, and access control lists (ACLs)
- Enhanced match-action unit pipelines and traffic manager provide precise control over packets

DCS810 (AS9516-32D) Applications

The DCS810 deployed as a leaf switch supports 25/50/100G interfaces to servers or routers with 100/400G uplinks, or deployed as a spine switch supports 100/400G leaf and spine interconnects.
In addition, the protocol-independent switch architecture (PISA) allows users to define new protocols and forwarding functions easily. The switch can also function as an ultra-high bandwidth packet broker, load balancer, telemetry or an analytics engine that is capable of handling the most demanding workloads in distributed applications.



Storage and Application Server



400Gbps to 2 x 200GbE

400Gbps to 4 x 100GbE

400Gbps to 8 x 50GbE

Product Details - 400G/100G Programmable Switches




	DCS810	DCS802	DCS801	DCS800
Model Number	**AS9516-32D**	**Wedge100BF-65X**	**Wedge100BF-32QS**	**Wedge100BF-32X**
Interfaces				
400 Gigabit QSFP-DD	**32**	**—**	**—**	**—**
100 Gigagbit QSFP 28	**—**	**65**	**32**	**32**
Serial Console	**Yes**	**Yes**	**Yes**	**Yes**
RJ-45 Management	**Yes**	**Yes**	**Yes**	**Yes**
USB Port	**Yes**	**Yes**	**Yes**	**Yes**
Memory and Spaces				
DRAM	**8GB SO-DIMM**	**8GB SO-DIMM**	**48GB SI-DIMM**	**8GB SO-DIMM**
Storage Options	**128G m.2 SSD**	**128G m.2 SSD**	**2TB SSD TLC**	**128G m.2 SSD**
Performance				
MAC Address Table Size	**128K***	**16K***	**16K***	**16K***
Switching Capacity	**12.8 Tbps. (25.6 Tbps full duplex)**	**6.4 Tbps (12.8 Tbps full duplex)**	**3.2 Tbps (6.4 Tbps full duplex)**	**3.2 Tbps. (6.4 Tbps full duplex)**
Match Action Pipelines	4 pipeline, 20 stages	4 pipeline, 12 stages	4 pipeline, 12 stages	2 pipeline, 12 stages
Forwarding Rate	**19 Bpps**	**9.5 Bpps**	**4.7 Bpps**	**4.7 Bpps**
Packet Buffer Size	**64MB**	**22MB**	**20MB**	**20MB**
Jumbo Frame	**9216 bytes**	**9216 bytes**	**9216 bytes**	**9216 bytes**
Hardware				
Switch Silicon	Tofino2 BFN-T20-128Q (U series)	Tofino BFN-T10-064Q	Tofino BFN-T10-032Q	Tofino BFN-T10-032D
Central Process Unit	Intel Pentium D-1517. (4 core@1.6GHz)	Intel Pentium D-1517 (4 core@1.6GHz)	Intel Xeon D-1548 (8 core @2.0GHz)	Intel Pentium D-1517 (4 core@1.6GHz)
Air Flow	Front to Back	Front to Back	Front to Back	Front to Back
Fan Module	5 +1	9 +1	4 +1	4 +1
Power Module	2	2	2	2
Dimension (WxDxH) cm	44 x 50.7 x 4.4	44 x 50.9 x 8.7	44 x 50.9 x 4.4	44 x 50.9 x 4.4
Operation Temperature	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
Maximum Power Consumption	max. 1150 W	max. 1000 W	max. 550 W+A5A6:E28AA2:E28	max. 500 W

*: MAC table can be scaled up by P4