PICA8
OPEN NETWORKING

72 x 10 GbE

Industry Leading Network Virtualization Scalability

Key Features

- **Purpose-built to scale VXLAN or OpenFlow* based Spine or Leaf data center topologies leveraging high-performance TCAM**
- **First system to partition and optimize the number of TCAM entries required for flow rules**
- **First open switch for open networks leveraging hardware-agnostic operating system**
- **Fully non-blocking 10 GbE fabric with ultra-low latency**

Pica8 P-5101

- Up to 72 x 10 GbE SFP+ ports leveraging the 40-port 10 GbE SFP+ base unit, with 8 x 40 GbE QSFP+ or 32 x 10 GbE QSFP+ to SFP+ uplinks
- Cost-effective VXLAN termination

Overview

Pica8's purpose-built open switches are ideal for cloud data centers that require flexibility and adaptability. Pica8™ open switches seamlessly integrate with today's data center applications on traditional network architectures, while allowing the exploration of new software defined networking (SDN) technologies, such as OpenFlow.

Pica8 white box switches run PicOS™, an open network operating system (OS) that runs standards-based Layer 2 / Layer 3 protocols with industry-leading OpenFlow 1.4 / Open-vSwitch (OVS) 2.0 integration. OVS runs as a process within PicOS, and provides the OpenFlow interface for external programmability. PicOS utilizes proven high-performance hardware to deliver wire speed through a switching fabric capacity of 1.44 Tbps.

Leverage Pica8's operating system - PicOS - for two powerful modes of operation

	Layer 2 / Layer 3 Mode	Open vSwitch (OVS) Mode
OPEN	• Switching platform with Debian Linux on board and accessible • Programmable and customize by leveraging vast high-quality Linux tools	• Industry-leading OpenFlow 1.4 support through Open vSwitch (OVS) 2.0 integration • Leverage production-ready OVS switches for your CloudStack / OpenStack projects
FLEXIBLE	• High-performance Layer 2 / Layer 3 switching platform for both IPv4 and IPv6 networks, seamlessly integrating into existing architectures • Tune the fabric to meet your application needs, selectable store-and-forward or cut-through switching modes for ultra-low latency	• Interoperable with multiple Open Source OpenFlow controllers such as Ryu, Floodlight, NOX, and Trema • Leverage different controllers and reference architectures
ADAPTIVE	• PicOS a multiprocess OS, ensures each process has independent memory space, thread control, and interrupt handling for improved feature scaling	• Seamlessly add new protocols to PicOS, a multiprocess OS • Investment protection as your application needs change

* Only OpenFlow features supported in hardware are supported, to ensure optimum performance

PRODUCT REFERENCE GUIDE

	P-5101
Performance	
Switch Fabric Capacity (Tbps)	1.44
Forwarding Capacity (Mpps)	1071 (Based on 12 Bytes interpacket gap condition)
Forwarding Options	Store-and-Forward / Cut-Through
Packet Buffer Memory (MB)	12
Latency (ns)	Around 0.7 us for 64Byte Frames
System Memory (GB)	4
SD/CF Memory (GB)	8
CPU	P2020 / Trident2
Ports	
40-Port Base Unit	10 GbE SFP+
Uplink Options	32 x 10 GbE (QSFP+ to SFP+) or 8 x 40 GbE (QSFP+)
SFP+ / QSFP+ Options	SR, LR / SR4, LR4, CR4
Console Port	1 x RJ45 Serial
Management Port	1 x 10/100/1000BASE-T
Layer 2 / Layer 3 Features	
ACL Entries	4K
Maximum MAC Addresses	288K
Maximum VLANs	4,094
Link Aggregation (Groups/Ports)	1024 / 8
Jumbo Frames (Bytes)	12,000
Maximum Routes	112K IPv4, 56K IPv6
Spanning Tree	STP/RSTP/MSTP
IPv4 Routing	RIP, OSPFv2/ECMP, BGP-4/ECMP, Static
IPv6 Routing	RIPng, OSPFv3, Static
Multicast Routing	PIM-SM, IGMP, IGMP Snooping
OpenFlow Support	
Large TCAM	Yes
Open vSwitch	v2.0
MPLS over OVS	Yes
GRE Tunneling	Yes
Physical & Environmental Specifications	
Size (Inches)	1.73(H) x 17.3(L) x 16.0(D)
Weight (lbs)	17.63
MTBF (Hours)	187,444
Air Flow	Front to Back / Back to Front
Hot-Swappable Redundant Power	Yes
Power Draw (Watts)	460
Input Voltage / Frequency	100 - 240 VAC / 50 - 60 Hz
Operating Temperature	32 - 113 °F (0 - 45 °C)
Operating Humidity	95% Maximum Relative Humidity
LEDs	Port Status (Green), Activity Status (Blinking)
Regulatory Compliance	
Emissions	FCC, CE, VCCI, CCC, BSMI
Safety	UL, CE
RoHS	Yes

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