PF5459

OpenFlow/SDN
Software Defined Networking

OpenFlow/SDN product to easily and cost-effectively **deploy, control, monitor, and manage networks**

ProgrammableFlow SDN automates and simplifies network administration for greater business agility, and provides a network-wide programmable interface for unifying the deployment and management of network services with the rest of IT infrastructure. This open network architecture separates the network control plane from the data plane – centralizing and streamlining network administration.

PF5459-48XP-4Q
4x 40Gb Ethernet (QSFP+)
48x 10Gb/1Gb Ethernet (SFP+/SFP)

PF5459-48GT-4X2Q
2x 40Gb Ethernet (QSFP+)
4x 10Gb/1Gb Ethernet (SFP+/SFP)
48x 1Gb Ethernet

PF5459-48XT-4Q
4x 40Gb Ethernet (QSFP+)
48x 10Gb/1Gb Ethernet

> **OpenFlow version 1.3.1** - By managing route control features in a centralized way at the controller, The system develops and deploys simple and flexible network based on new network technology for next generation data center.
> E**nhancement of scalability** - The PF5459 dynamically records path by itself using information of MAC address like normal layer 2 switches. And then the PF5459 reduces load of the controller based on the record. It means that the system deploys more scalable data center and the PF5459 is available as a TOR(Top of Rack) switch.
> **Full-wire-rate packet forwarding** - It makes effective packet forwarding that hardware executes OpenFlow features, searching flow entry and performing action.
> **Compatibility** - Normal LAN features (multilayer switch, IP router functionality etc.) and OpenFlow features can coexist.

PF5459 OpenFlow/SDN

Technical Data

			PF5459-48XP-4Q	PF5459-48GT-4X2Q	PF5459-48XT-4Q
Maximum Switching Capacity			1,280Gbps	336Gbps	1,280Gbps
Maximum Packet Processing Performance			952Mpps	250Mpps	952Mpps
Network Interface Features	10/100/1000BASE-T		-	48	-
	1000/10GBASE-T		-	-	48
	1000BASE-X	SFP(SX/LX/ZX/T)	48[1]	4[1]	-
	10GBASE-R	SFP+(SR/LR, 1M/3M/5M DAC)	48[1]	4[1]	-
	40GBASE-R	QSFP+(SR4, 1M/3M DAC, 1M/3M SFP+x4 DAC Splitter Cable)			4
Management Interface			Console port (RJ-45 serial) x 1, Ethernet port x 1, USB port x 1		
OpenFlow Features	Version		OpenFlow Version 1.3.1		
	Switch Instance		-		
	Secure Channel		TCP Connection		
	OpenFlow Interface		Physical port [Physical], Lag [Logical], Controller [Reserved]		
	Protocol		Hello, Error, Echo Request, Echo Reply, Features Request, Features Reply, Get Configuration Request, Get Configuration Reply, Set Configuration, Packet In, Flow Removed, Port Status, Packet Out, Flow Mod, Group Mod(type=ALL),Port Mod, Multipart Request, Multipart Reply, Barrier Request, Barrier Reply		
	Dynamic MAC Flow Table	Matching Fields (Exact/Wildcard)	Ethenet destination address, VLAN ID		
		Instructions	Write-Action, Write-Metadata, Goto-Table		
		Acsions	Output, Drop, Next-table		
		Field-modify Actions (Set Filed)	-		
		OpenFlow Statistics	-		
		Flow Entries	128k (Maximum)		
	Flow Table (Standard)	Matching Fields (Exact/Wildcard)	Ingress port, Metadata, Ethernet source address (maskable),Ethernet destination address (maskable), Ethernet Type, VLAN ID, VLAN PCP, IP DSCP, IP protocol number, IPv4 source address (maskable), IPv4 destination address (maskable), TCP/UDP source port, TCP/UDP Destionation port, ICMPv4/v6 Type, ICMPv4/v6 Code, ARP SPA (maskable)		
		Instructions	Apply-Action, Write-Action		
		Actions	Output, Set-Queue, Group (type=ALL), Set-Field, Drop		
		Field-modify Actions (Set Filed)	Ethernet source address, Ethernet destination address, VLAN ID, VLAN PCP, IP DSCP		
		OpenFlow Statistics	Flow Counter - Receive Packets, Received Bytes, Duration (seconds)[2], Port Counter		
		Flow Entries	640 (Maximum)		

1) SFP/SFP+ are available as 1000BASE-X/10GBASE-R.

2) Combinations of Flow Counter are NOT available at the same time.

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Normal LAN Features[3]	Routing Protocol	IPv4	Unicast	Static, RIP, RIP2, OSPF, Policy based routing		
		IPv6	Unicast	Static, RIPng, OSPFv3		
	Layer2 Features	VLAN		Port-VLAN, Tag-VLAN(IEEE802.1Q)		
		Spanning Tree Protocol		STP(IEEE802.1D), RSTP(IEEE802.1w)		
	Network Features	Reliability, Availabiity		Link Aggregation(IEEE802.3ad), CFD(IEEE802.1ag)		
	Operation			SNMPv1/v2c/v3 , MIB II, syslog, CLI, ping, traceroute, SSH, telnet, ftp, tftp, NTP, Port Mirroring, RADIUS, sFlow		
Redundancy				Internal redundant power supply Hotswappable, Internal fan Hot-swappable		
Input Voltage(AC)				100 VAC - 240 VAC @ 50 or 60 Hz		
Input Voltage(DC)				-40 VDC - -60 VDC		
Maximum Power Consumtion				AC:305W DC:384W	AC:174W DC:226W	AC:455W DC:452W
Maximim Heat Value				1390kJ/h	820kJ/h	1640kJ/h
Operating Conditions	Temperature			0 - 45°C		
	Humidity			10 - 90% Non-condensing		
	Noise			62dB		
	Vibration			-		
Dimensions WxDxH (mm)				440×660×43.6(1U)	440×460×43.6(1U)	440×660×43.6(1U)
Weight				13.5kg	10.5kg	13.7kg
Air Flow				Front to Rear Rear to Front[4]		

3) With the exception of some feature, normal LAN features are NOT available via OpenFlow interface.

4) Air flow is adjustable by changing direction of fan.

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