

Marvell® Teralynx®8 Data Center Ethernet Switch

The world’s highest performance programmable switch – 8 Tbps through 25.6 Tbps featuring industry-leading analytics, largest on-chip buffer and lowest-latency

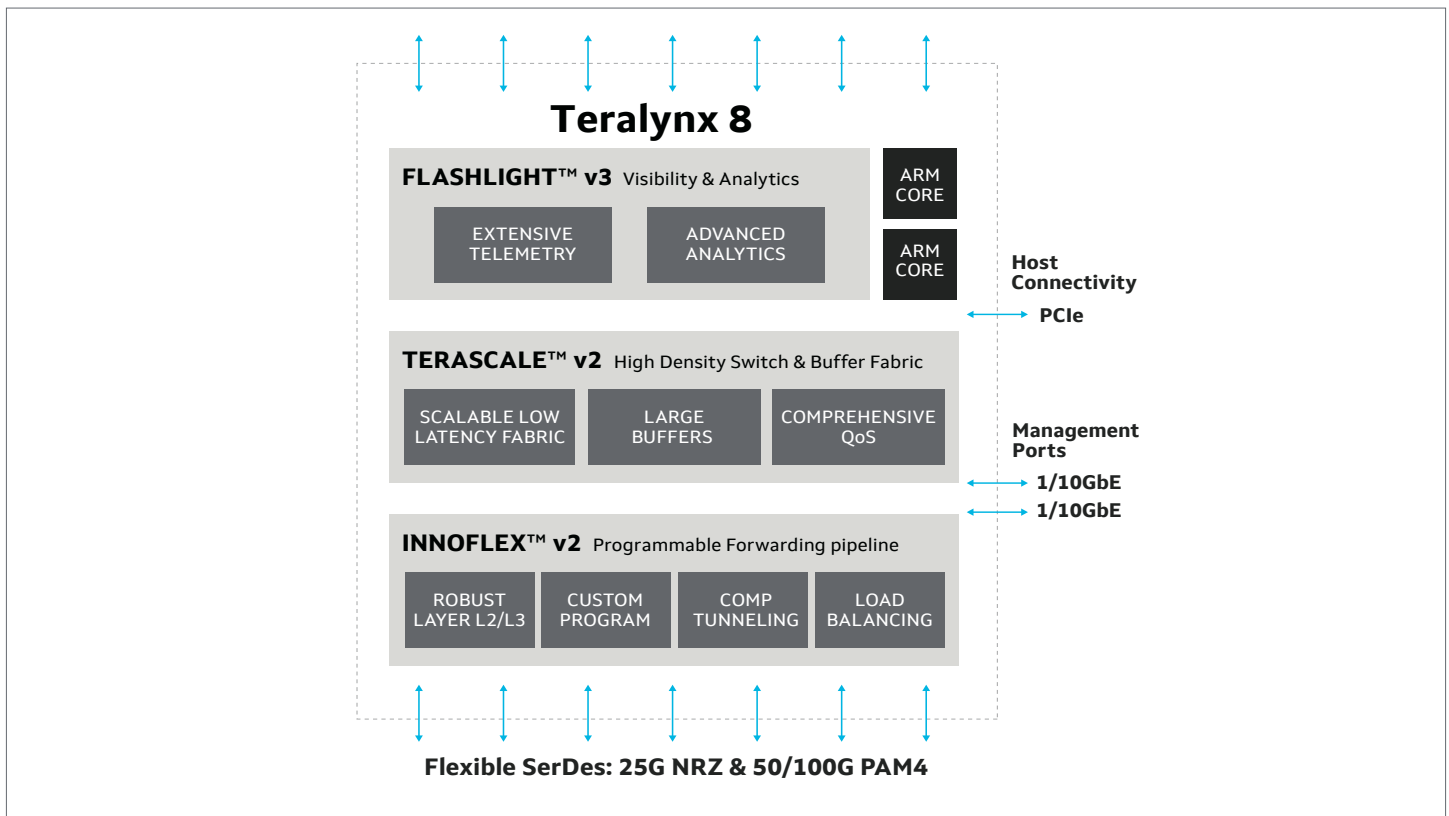
Overview

Data centers are set to dominate IT infrastructure across Cloud, Edge and Enterprise. In addition to an unlimited thirst for bandwidth, critical data center requirements include deeper, actionable analytics, programmability for fast feature introduction & investment protection, best power efficiency, low latency and flexibility. These factors demand a fresh, innovative and focused approach to architecting highly scalable, high performance networking silicon.

Marvell is the only provider offering robust PAM4 networking solutions with a consistent feature set for 1 to 25.6Tbps products today with architecture scaling to 51.2Tbps+. Marvell’s Teralynx family delivers low latency, advanced

telemetry, rich tunneling and programmability to enable unmatched visibility while easily adapting to new network protocols. Introduction of Teralynx 8 along with Teralynx 5 and Teralynx 7 provide a comprehensive switch silicon portfolio for ToR and upper network tiers of cloud and edge data centers. The Teralynx 8 family supports FLASHLIGHT™ v3, Marvell’s unique telemetry with the ability to pinpoint any network delays, drops, or congestion and correlate network events to the application level, all in hardware with zero impact to performance. Modern software for Teralynx family, designed from the ground up, has been hardened to be production grade so customers can deploy these switches with confidence.

Block Diagram



Key Features


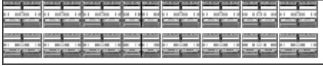
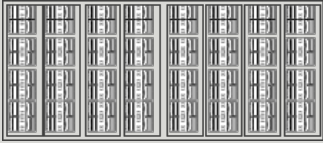
Features	Benefits
<ul style="list-style-type: none">• 25.6 Tbps throughput with 256x 112 Gbps SerDes	<ul style="list-style-type: none">• Industry leading performance and scale enables customers to deploy fewer network switches and tiers dramatically reducing cost, power, latency & management
<ul style="list-style-type: none">• Comprehensive IP forwarding and highly scalable/flexible layer 2 and 3 tables for IPv4, IPv6 and hybrid networks	<ul style="list-style-type: none">• Proven, innovative & highly scalable architecture delivers 64 x 400Gbe, 128 x 200G and 256 x 100GbE ports
<ul style="list-style-type: none">• Line-rate programmability to accommodate future networking protocols with software upgrades	<ul style="list-style-type: none">• 100G LR SerDes enables higher scale IO with backward compatibility to 50G PAM4 & 10/25G NRZ
<ul style="list-style-type: none">• Extensive tunneling capabilities such as IP-in-IP, GRE, MPLS, VXLAN and Geneve	<ul style="list-style-type: none">• Breakthrough visibility and analytics capabilities enable predictive, faster & more accurate issue resolution, higher automation and self-healing autonomous networks
<ul style="list-style-type: none">• Very low latencies - cut-through and store-and-forward	<ul style="list-style-type: none">• Superior power efficiency enables customers to design 1RU 32 x 800G switches for best power and cost per bit
<ul style="list-style-type: none">• Advanced QoS/traffic management feature set such as DCB, RDMA/RoCE	<ul style="list-style-type: none">• InnoFlex™ programmable forwarding pipeline enables support of custom & new standard protocols without requiring ASIC spins to future proof the network
<ul style="list-style-type: none">• FLASHLIGHT™ v3 innovations delivers breakthrough visibility and telemetry addressing Cloud customer requirements	

Customer Deployment Scenarios

- Data Center networking infrastructure for private and public cloud data centers
- Ideal for all network tiers including leaf, spine and DCI
- High density 100/200/400/800G switches

Software Support

- Common software development kit (SDK) across the entire Marvell product line
- High Performance and highly resilient, modern software with a clean sheet design
- Support for open APIs including OCP SAI and SONiC

	Form Factor	Use Case	Key Benefits
	1RU, 32 x 800G (QSFP-00800 or 800G-OSFP)	800G switch for all network tiers including leaf, spine and DCI	Enables most compact 1 RU 25.6T switch system. Together with 800G optics, delivers the best cost per bit
	2RU, 64 x 400G (QSFP-00 or OSFP or QSFP112)	400G switch for all network tiers including leaf, spine and DCI	Highest radix 400G switch using single chip
	4RU, 128 x 200G (QSFP-56)	200G switch for all network tiers including leaf, spine and DCI	Highest radix 200G switch using single chip

Ordering Information

SKU / Part Number	Capacity (Tbps)	# of SerDes @ Gbps	10/25/50G ports	100G ports	200G ports	400G ports
IVM88700	25.6	256@ 10/25/50/100	256	256	128	64
IVM88500	12.8	256 @ 10/25/50	128	128	64	32
IVM88300	8.0	160 @ 10/25/50	80	80	40	20



To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

Copyright © 2021 Marvell. All rights reserved. Marvell and the Marvell logo are trademarks of Marvell or its affiliates. Please visit www.marvell.com for a complete list of Marvell trademarks. Other names and brands may be claimed as the property of others.