Marvell® PRESTERA® 98DX83xx Family

A New Generation of Prestera-DX Multi-Layer 1G/10G/40G Ethernet Switches

Overview

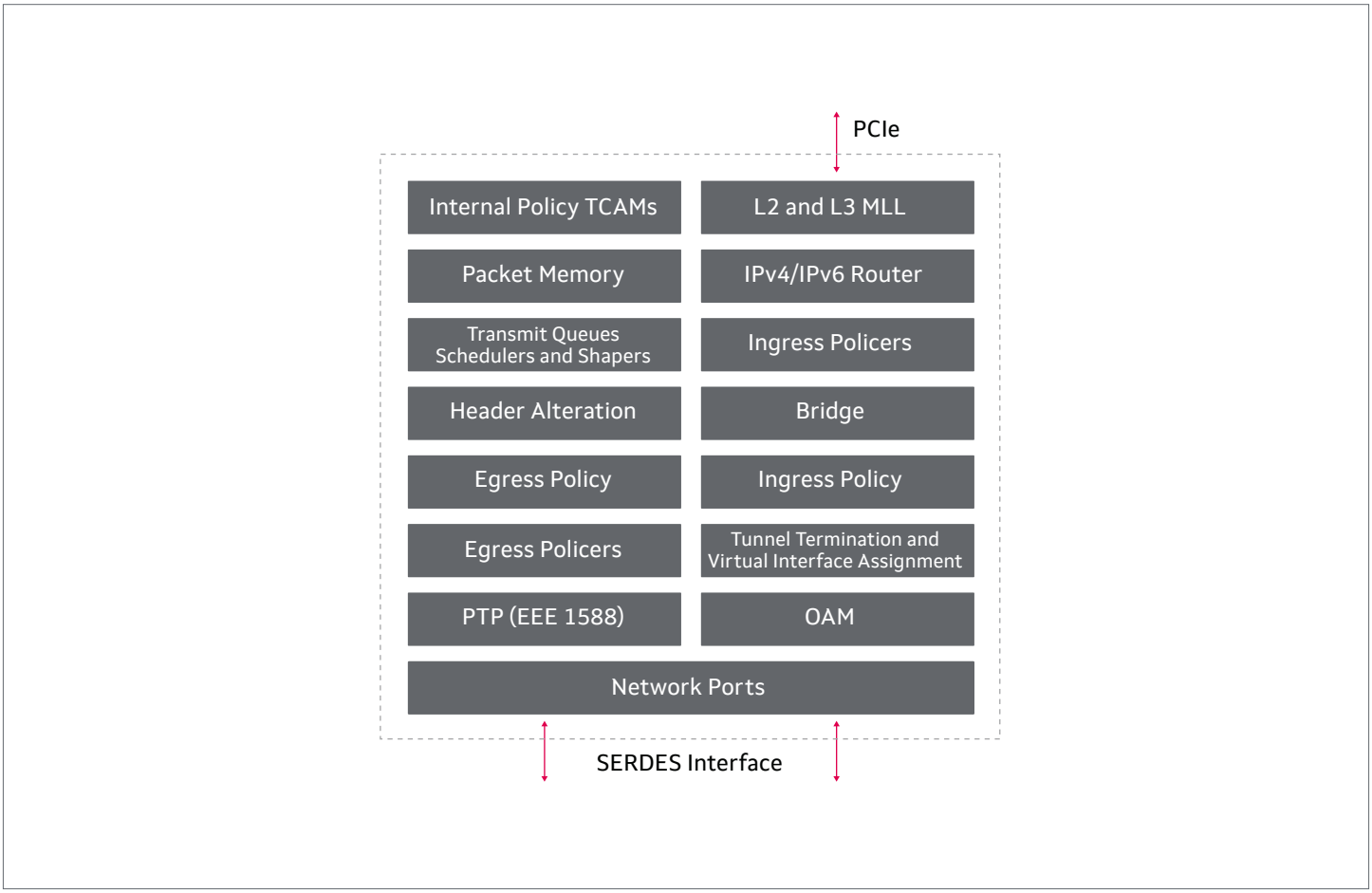
Marvell® Prestera® 98DX83xx multi-layer Ethernet switch devices are a new generation of highlyintegrated packet processors built for service delivery in Campus LAN Access Switch and Aggregation, Wi-Fi 802.11ac Wave2 Access Point Aggregation, eDrive and Server connectivity, and other interconnect applications requiring low-power 40GbE and 10GbE connectivity.

They can be used in SDN and OpenFlow applications, utilizing its multiple TCAM lookups for generic match/action rules and its L2/L3 forwarding tables. The Marvell Forwarding Plane Abstraction (FPA) software suite enables seamless integration with the leading OpenFlow agents and controllers.

The Marvell Prestera 98DX83xx family includes extensive traffic counters across all its processing and forwarding/fi ltering engines. The architecture enables key technologies, such as standard virtual overlay encapsulations as well as large L2/L3-host Forwarding Database (FDB) and Longest Prefix Match (LPM) tables for high scaling of L2/L3 services.

These devices support two-step and one-step Precision Time Protocol (PTP) per the IEEE 1588v1/v2 standard and includes up to 33 high-speed, low-power, multi-rate SERDES. It is also feature and software compatible with the previous generations of the Prestera-DX Family of devices and provides a consistent architecture for 1 and 10 Gigabit Ethernet devices.

Block Diagram



Key Features

Features	Benefits
High Integration	• Large packet buff ers • Shared TCAMs resources with Flexible TCAM sizes • High-speed SERDES
Multi-Rate FlexLink Ports	• 10/100/1000/2500 Mbps Ethernet MAC with SGMII • 5G Ethernet MAC with 5GBASE-KR • 10G Ethernet MAC with XAUI or RXAUI or 10GBASE-KR • 20G Ethernet MAC with proprietary 20GBASE-KR2 • 40G Ethernet MAC with 40GBASE-KR4
Virtual Overlay Network	• NVGRE, VXLAN-GPE, GENEVE, SPB, and 802.1BR port extender
Unified Architecture	• Support for virtual bridging and routing and congestion management features enabling OpenFlow, SDN/Network Function Virtualization (NFV) cloud-managed network deployments
SERDES Test Capabilities	• Rx and Tx/Rx Training capability per SERDES lane for optimizing the SERDES performance and error rate • Built-in test capabilities (loopback and PRBS) per SERDES lane • Eye Opening Monitor per SERDES lane for tuning and diagnostics
Layer-2 Wire-Speed Switching Engine	• IEEE 802.1Q-compliant bridging • Large Forwarding Database (FDB) providing exact-match lookup for MAC entries, IGMPv3/MLDv2 IP Multicast, FCoE entries, and Router Host entries • Learning and forwarding based virtual ports (ePorts) and virtual bridge domains (eVLANs) for L2/VSI overlay services • L2 ECMP and Link Aggregation Groups (LAGs) for load sharing and fast failover • IEEE 802.1w (RSTP) and 802.1s (MSTP)
Advanced Power	• Adaptive Voltage Scaling (AVS) support on core voltage • 2 Voltage rails: 1V, 1.8V
Development Kit	• Prestera Software Suite (CPSS) driver support • Compatible with all Prestera®-DX APIs and concepts • Board Support Package (BSP) provided for Linux • Marvell total solution application software • Firmware for unmanaged switch

Target Applications

The Marvell Prestera 98DX83xx family provides a consistent architecture for 1 Gigabit and 10 Gigabit Ethernet devices. Typical target applications include:

- Enterprise and Campus 10GbE Access and Aggregation Switch
- 10G embedded connectivity (base station, servers)
- SMB Managed, smart and unmanaged 10GbE switches for Internet café and Gaming
- Storage and server connectivity in the private cloud

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