BCM56870
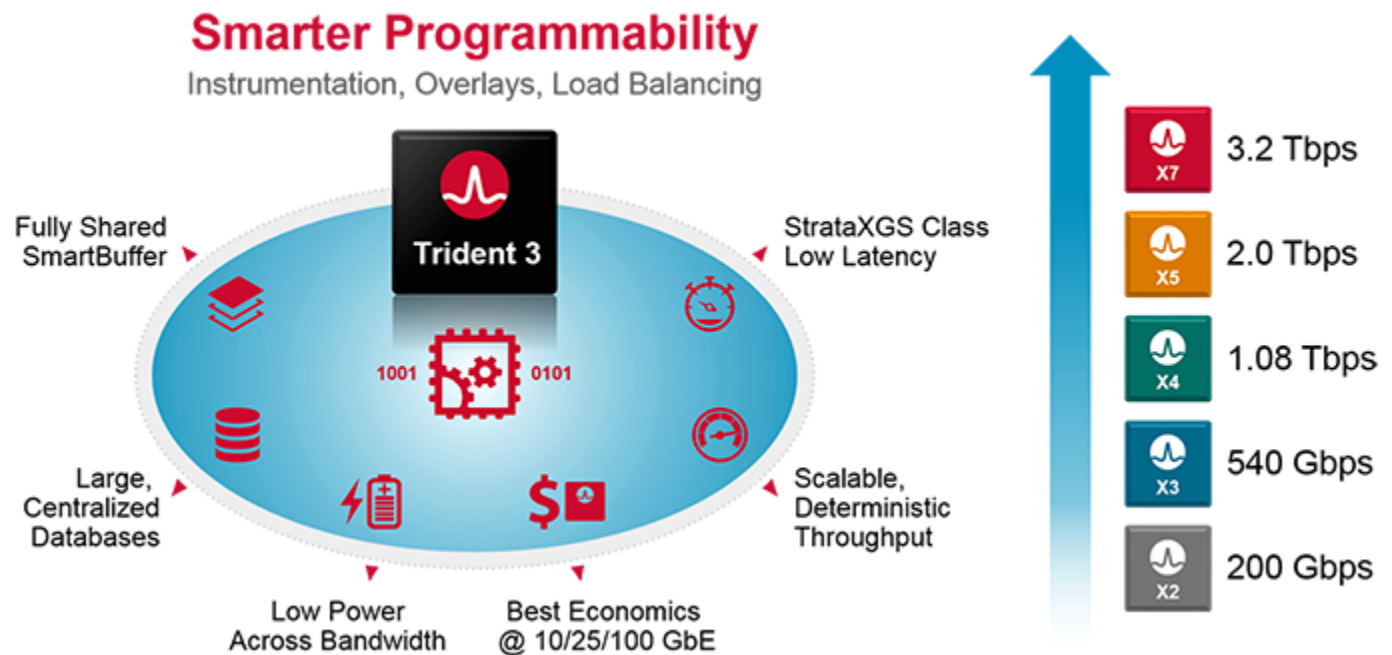
High-Capacity StrataXGS® Trident 3 Ethernet Switch Series

Certain versions of this device are not available for sale in Germany or shipment to or from Germany, and these versions should not be used in any product destined for the German market.

[A list of the specific implicated product numbers may be found here.](#)
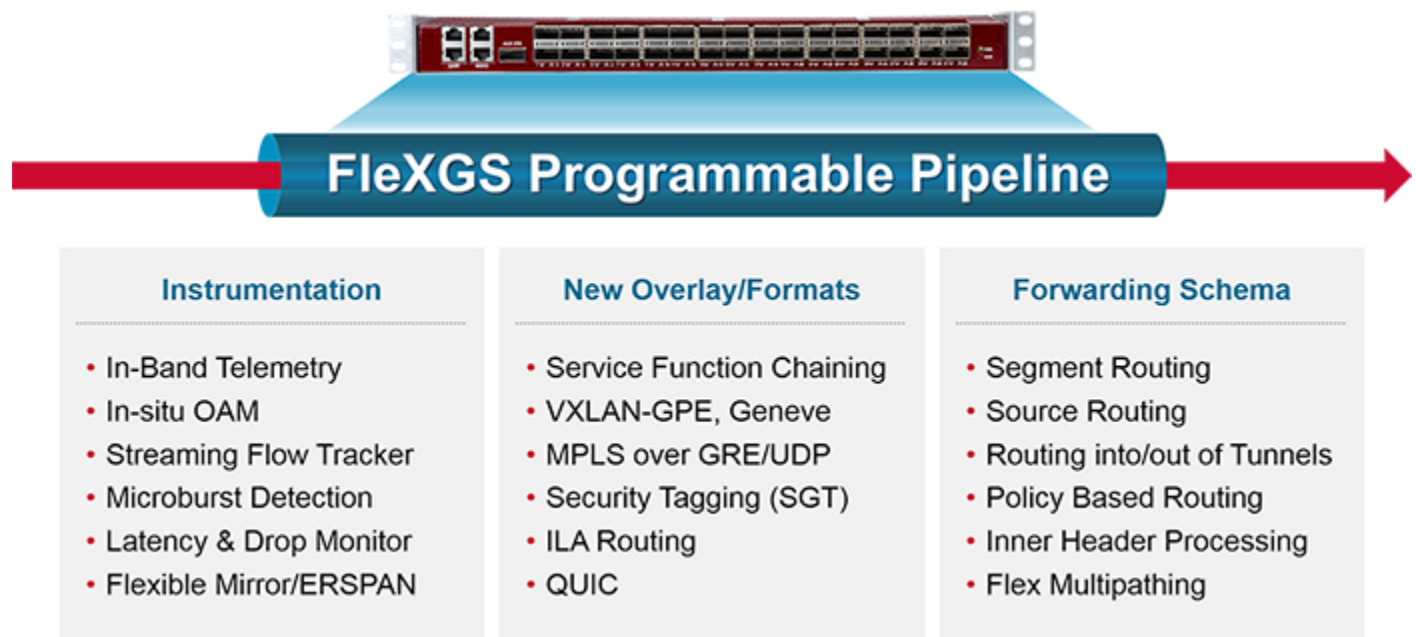

Server interfaces in the enterprise and service provider data centers are starting to transition from 10 to 25GbE. At the same time SDN is taking hold in these market segments, bringing with it many new requirements such as novel overlays, instrumentation and telemetry. Trident 3 introduces dataplane programmability and 25 Gbps SerDes into the industry-leading Trident™ line to address these evolving markets.

With support for up to 32 ports of 100GbE, the StrataXGS® Trident 3 switch series can be used to build highly scalable, low-power, feature-rich Top-of-Rack (ToR), Aggregation and Spine switches. The programmable pipeline allows new features to be added after deployment by means of in-field upgrade, providing capex investment protection for operators. Trident 3 programmability enables the latest, cloud-scale instrumentation and telemetry features, for example in-band telemetry. Trident 3 programmability can also be used to add new software-defined forwarding and database reconfiguration features.

In addition, fabrics of BCM56870 devices can be interconnected via the HiGig2™ protocol to support multi-terabit chassis designs for large-scale data center, enterprise and service provider applications.

The StrataXGS Trident 3 switch with integrated FleXGS™ Programmability technology has been designed to address performance, capacity and service requirements for next-generation data centers and cloud computing applications.

FleXGS Programmable Pipeline

Instrumentation

- In-Band Telemetry
- In-situ OAM
- Streaming Flow Tracker
- Microburst Detection
- Latency & Drop Monitor
- Flexible Mirror/ERSPAN

New Overlay/Formats

- Service Function Chaining
- VXLAN-GPE, Geneve
- MPLS over GRE/UDP
- Security Tagging (SGT)
- ILA Routing
- QUIC

Forwarding Schema

- Segment Routing
- Source Routing
- Routing into/out of Tunnels
- Policy Based Routing
- Inner Header Processing
- Flex Multipathing

Features

- Fully programmable dataplane allows introduction of new features via in-field upgrade
- Support for new overlays and tunneling such as GENEVE, NSH, VXLAN, GPE, MPLS, MPLS over GRE/UDP,
  GUE, ILA and PPPoE
- Up to 128x 25G integrated SerDes with CL 74, CL 91
  and CL 108 FEC
- New instrumentation features such as timestamping, trace captures and Inband Telemetry
- 32MB of on-chip fully shared packet buffer
- Dynamic Load Balancing enhances ECMP
- Large, programmable on-chip forwarding databases for L2 switching, L3 routing, label switching, and overlay forwarding
- 3X increased ACL scale to support evolving policy/security requirements
- PCIe Gen3 x4 host CPU interface with on-chip accelerators improves control-plane update and boot performance by up to 5X
- Programmable support for enhanced network telemetry, including per-packet timestamping, Flow Tracker, microburst detection, latency/drop monitor, Active-probe-based in-band network telemetry, and in-band OAM processing; integrated with open-source BroadView v2 telemetry agent and analytics software
- Adaptive Routing for dynamic traffic engineering in non-Clos topologies
- Full feature compatibility with previous generation Trident 2 and Trident 2+ devices

Applications

- Single-chip solution for data center Top-of-Rack, Aggregation and Spine Switches
- Data center Fixed and Chassis/Modular switches
- Enterprise aggregation and converged core
- Data Center Interconnect (DCI)
- Software-Defined Networking Solutions