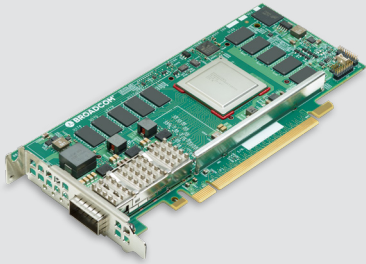


Product Brief



Key Features

- Low-power, high-density 100 Gb/s fabric storage adapter
- PCIe form-factor for ease of design-in
- Stingray Data Center SoC featuring eight 3.0 GHz 64-bit ARMv8 Cortex-A72 cores and integrated NetXtreme® E-Series 100GbE Network Interface Controller
- 16 lanes of PCIe Gen3 with flexible Root Complex controller assignment
- Two channels of DDR4-2400 72-bit with ECC
- Sideband ports (1GbE and NC-SI) for management access and maintenance
- 100 Gb/s cryptographic engine with single-pass hashing and encryption
- RAID 5 XOR and RAID 6 P+Q Galois/Erasure support

Applications

- NVMe-oF (RDMA-based) storage target
- NVMe-oTCP (TCP-based) storage target
- Block/object storage target
- Storage services offload

Stingray™ PS1100R

Fully Integrated 100GbE Fabric-Attached Storage Adapter

Overview

The Broadcom® Stingray™ PS1100R is a high-IOPS, low-power fabric storage adapter that delivers unprecedented performance per watt in a compact and ubiquitous form factor, enabling fast development and delivery of storage services and fabric-attached Flash solutions. The industry-leading Stingray BCM58804H data center SoC, which combines powerful networking and processing subsystems with hardware acceleration for key workloads, forms the foundation of the PS1100R adapter.

The Stingray SoC features an octal-core processor complex of ARM v8 Cortex-A72 CPUs at 3.0 GHz, 16 MB of L2 and L3 cache, two 64-bit channels of DDR4-2400 DRAM, 100 Gb/s cryptographic engine, acceleration for RAID 5/6 and erasure coding, as well as a fully-integrated Broadcom NetXtreme E-Series 100GbE Network Interface Controller. Fabricated in 16 nm FinFET+ process, Stingray delivers high performance in a high-density, low-power envelope.

For connection to storage media, expansion switches, or storage controllers, the PS1100R adapter provides 16 lanes of PCIe Gen3. The 16 lanes of PCIe can have 2, 4, or 8 Root Complex assignments, enabling PCIe link configurations of 2×8, 4×4, and 8×2.

The PS1100R provides a single-port 100GbE connection via a single QSFP28 connector.

The Stingray family of products is supported by a comprehensive Software Development Kit providing a complete turn-key Linux distribution, and the open programming model enables porting of applications with minimal effort. The platform uses standard Linux and standard GNU tools and libraries. All drivers for the Stingray SoC are upstreamed to kernel.org, and all peripheral interfaces use standard device drivers.

In addition to the Linux kernel NVMeoF data path, the Broadcom SDK also supports the industry-standard user space Storage Performance Development Kit (SPDK) to enable maximum I/O performance.

Benefits

- Fully-integrated controller for fabric-attached storage
- Over 3 MIOPS (million I/Os per second) in an unprecedented low-power envelope
- PCIe form-factor enables fast system design and integration with standard chassis components
- Standard Linux and open programming model simplify porting and development of applications
- Programmable data plane allows fast adaptation to evolving storage transport protocols

Figure 1: Stingray PS1100R Board

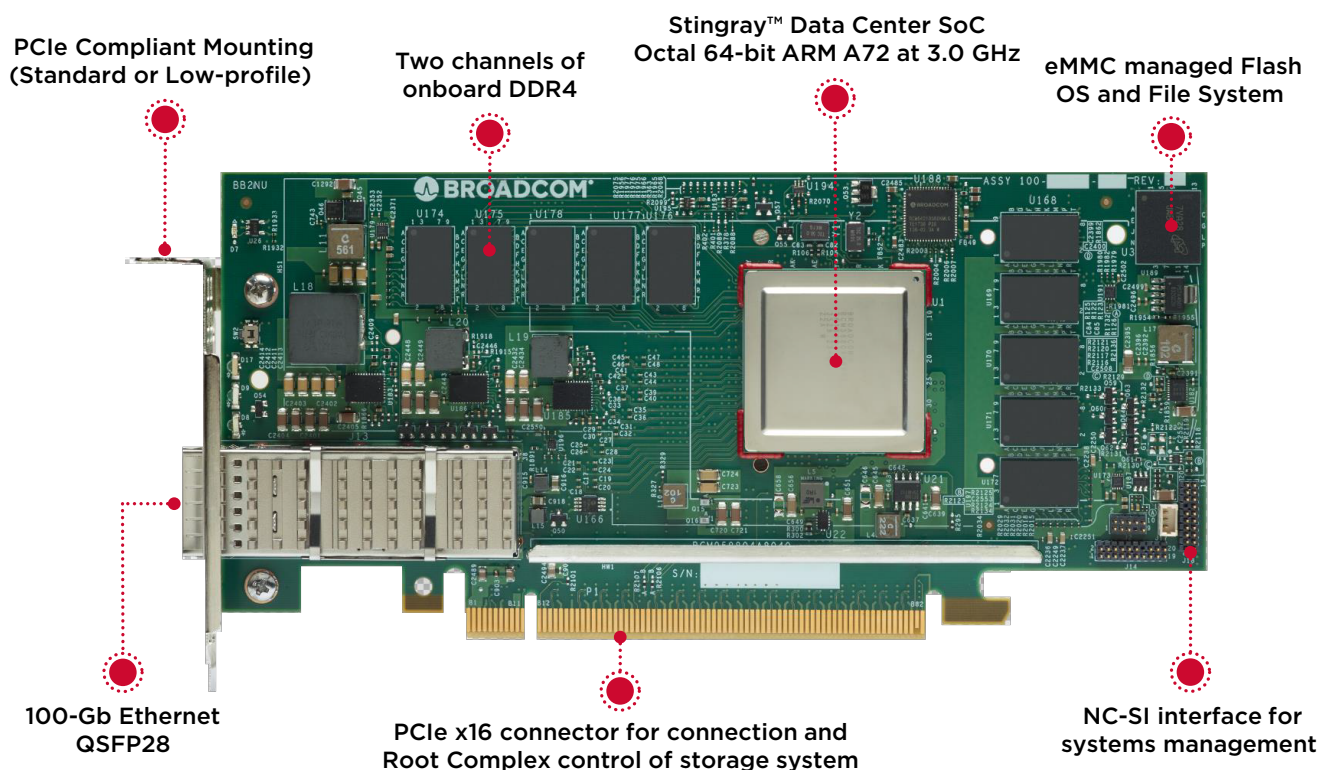
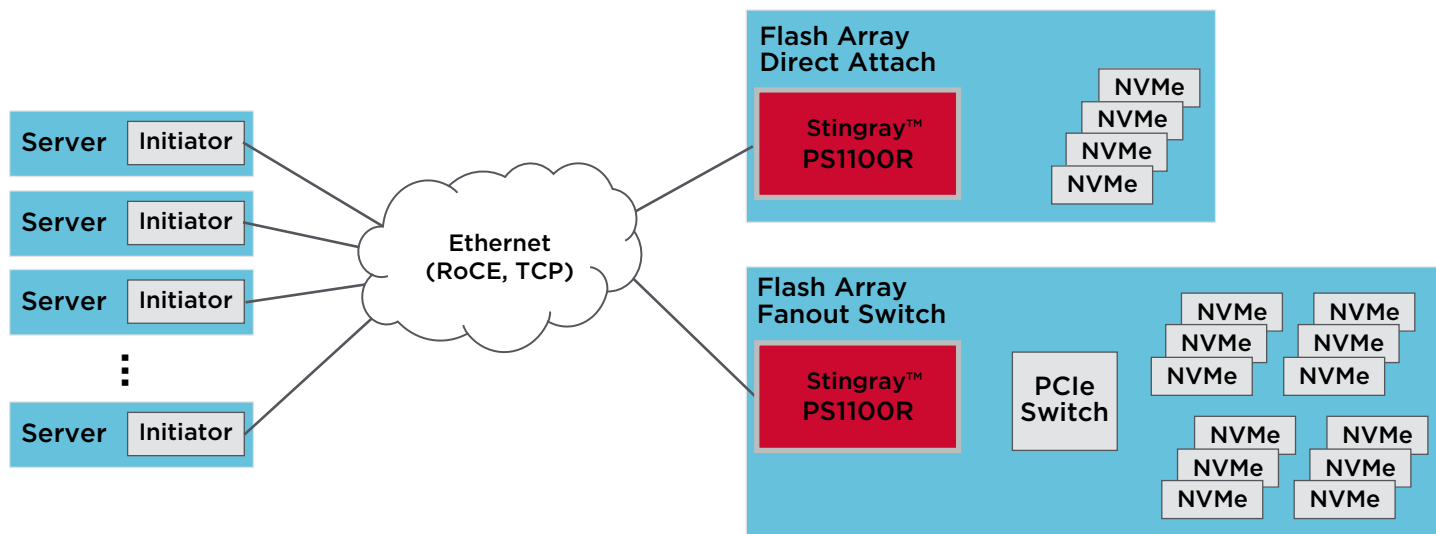


Figure 2: Fabric-Attached Storage Topologies using Stingray PS1100R



Ordering Information

BCM958804A8041C

PS1100R adapter with 8 GB DDR4 and passive heatsink

BCM958804A8040C

PS1100R adapter with 8 GB DDR4 and active heatsink