There is an immediate need for a new generation of hardware-accelerated data processing and storage management technology to support the current wave of high-capacity NVMe SSDs adoption. The increase in SSD storage capacity means a drive failure can significantly impact system availability, performance, and data protection. Pliops addresses this by eliminating blast radius anxiety. Key features include:

**No Compromise Drive Failure Protection (DFP)**

Pliops DFP provides no compromise RAID 5/6 style reliability without the performance and capacity penalties of traditional RAID solutions. Pliops DFP with Samsung SSDs enables drive rebuilds at **19.5 min/TB** with minimal performance impact and are **7.7x faster** than HW RAID 5.

**Unmatched Performance**

Meeting the performance needs of data-intensive workloads is increasingly costly by adding more server and CPU resources. Samsung PM1733 NVMe SSDs paired with Pliops XDP delivers **over 2x better performance** for 16K 50/50 workload at QD 256, with 96% user data fill.

**Breakthrough Capacity Scaling**

Pliops XDP increases capacity savings up to **6x** with inline compression while enabling full drive capacity usage. Endurance is enhanced up to **7x** for longer drive life through a dramatic reduction in write, read, and space amplification.

### Highlights

There is an immediate need for a new generation of hardware-accelerated data processing and storage management technology to support the current wave of high-capacity NVMe SSDs adoption. The increase in SSD storage capacity means a drive failure can significantly impact system availability, performance, and data protection. Pliops addresses this by eliminating blast radius anxiety. Key features include:

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### Applications

**RDBMS:** MySQL, MariaDB, PostgreSQL, and others  
**NoSQL:** MongoDB, Cassandra, Redis, and others  
**Storage Software:** Ceph, Gluster, and others  
**Analytics:** Apache Spark, Kafka, and others

### Benefits

- Accelerated performance with ultra-fast rebuilds  
- Simple, flexible deployment; no changes required  
- Higher data protection and efficiency, at scale  
- Single solution across applications and use cases

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**Figure 1.** Samsung PM1733 NVMe SSD and Pliops Extreme Data Processor (XDP)

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**Solution Testing**

The following is a sampling of test results comparing the performance of SW RAID 0 against Pliops DFP (RAID 5). Test configuration designed with one Dell PowerEdge R750 server, four Samsung 15.36 TB SSDs and a single Pliops XDP using a Linux® FIO benchmark tool: 16K 50/50 read/write workload at QD 256 with 96% user data fill.

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**2.2x Performance Gain with RAID 5 Protection**

- SW RAID 0  
- Pliops DFP (RAID 5)

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**Pliops DFP Rebuilds Data at 19.5 Minutes/TB with Minimal Performance Impact**

- SW RAID 0  
- DFP Before  
- DFP During

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