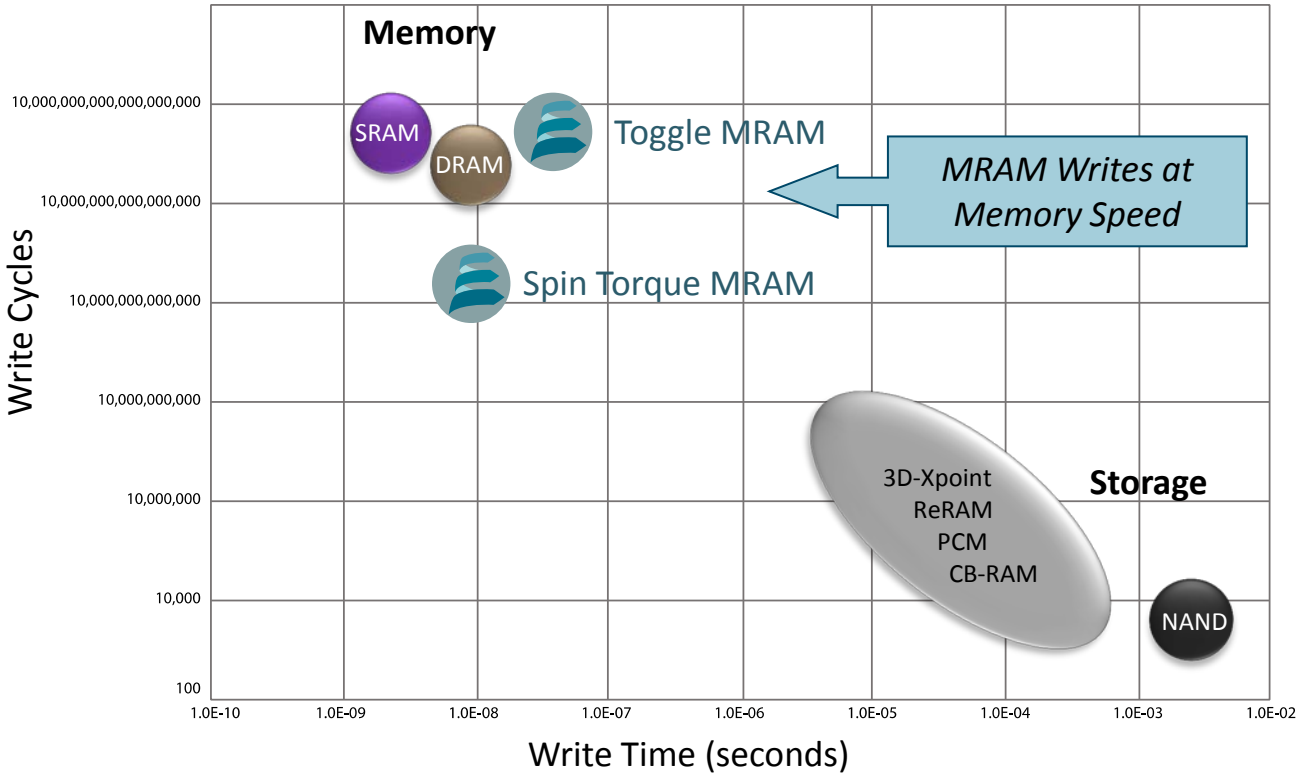
Company Overview

ST-MRAM - Performance With Persistence



- Memory is fast but volatile
- Storage is slower but non-volatile
- MRAM combines the performance of memory with the persistence of storage

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- Write performance is a requirement for a true SCM, otherwise it is just faster storage
- MRAM is only NVM that can be written enough times to avoid wear leveling
- Read performance of all new NVM technologies approaches that of DRAM

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Saturate PCIe

<6µs 4KB Random Write with standard drivers

<3µs 512B Random Write SPDK

nvNITRO™ Accelerators

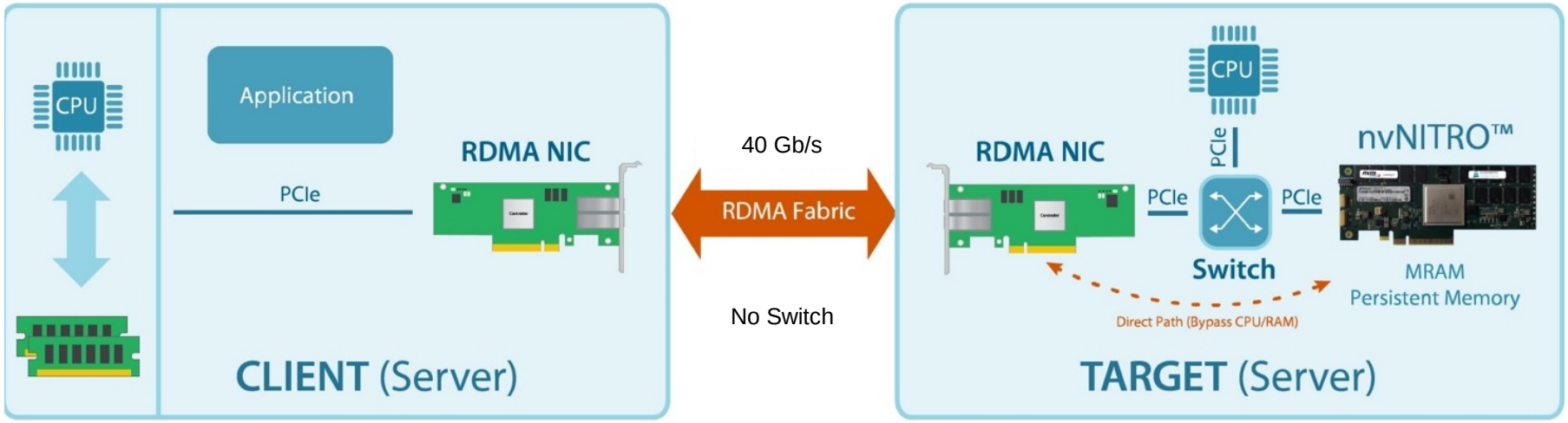
No system support required for power fail safe

Hot plug FRU

No initialization time

1GB & 2GB capacities this year with 4GB & 8GB next year

Remote Persistent Memory



- **Write 10M 64-Byte msgs/sec remotely to a power fail safe buffer**
  - End-End latency of less than 2uS
- **Write 4GB/s of data to a remote power fail safe buffer on 40Gb/s fabric**

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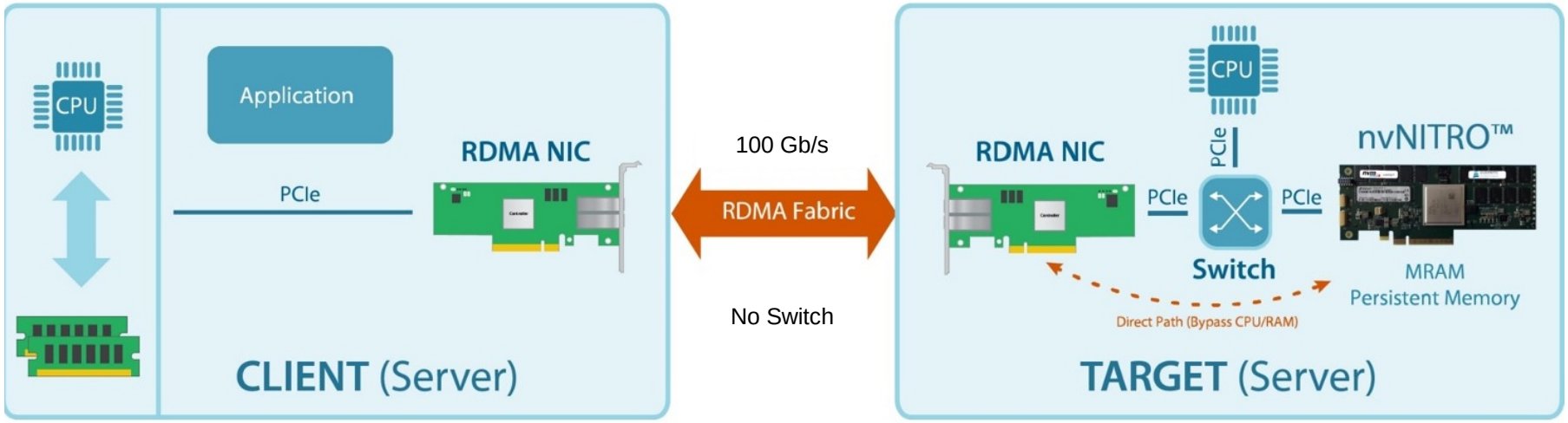
NVMe Over Fabrics



- **No offload – 19us 4K random writes**
- **Full offload - <10us 4K random writes**
  - **Persistent memory in nvNITRO makes this easier and faster**

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THANK YOU