

Growth of cloud and data centres fuels need for appropriate storage

 By [Calvin Subbadu](#)

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Massive data growth and an increasing trend toward virtualisation technology are having a profound impact on the modern organisation.



Calvin Subbadu

The data centre, as well as cloud services and solutions, both public and private, are becoming increasingly important to the survival and sustainability of a business. The commonality behind all of these factors is centred on a single challenge: ensuring appropriate storage for enterprise applications. Given the critical nature of data, the demands of running a data centre, the requirement for maximum uptime and the nature of the cloud, hard drive technology is pivotal and could have far-reaching business consequences.

Data centre investment is seeing massive growth, according to the Data Centre Industry Survey 2013 published by The Uptime Institute. The survey cites that data centre budgets are on the rise and public cloud service adoption has seen impressive growth. These two factors correlate, as public cloud service adoption requires increased storage capacity within the enterprise.

While the figures represented in these statistics relate to users in the US, the South African landscape is similar. Although adoption in South Africa has not been as extensive, it is on the rise - and in a digital world data remains the most important asset of any business. This means that the appropriate hard drive technology to support data storage, cloud and business applications is essential to any business today.

Hard drives used in a data centre must be built to run in always-on environments. They also need to maintain maximum performance and data integrity within complex systems running massive scale applications. From multiple processors and redundant power supplies to specialised storage devices and robust interfaces, such as Serial Attached Storage (SAS),

data centres demand the highest quality and most reliable components to ensure maximum uptime, expandability, and data integrity.

The challenge is that data centre requirements are not homogenous. In addition, as data centres evolve in response to the explosive growth of unstructured data, the requirements from an enterprise-class hard drive need to be extended to support scale-out architectures. These different applications place different reliability and workload requirements on the drives. The various tiers of storage need to create the right balance of reliability, workload capability, performance, capacity and cost per gigabyte to deliver optimal data centre storage.

Delivering high performance in the data centre

Demanding applications, such as online transaction processing, high-performance database, analytics applications, multi-tenant server applications and virtualised servers, require both high performance and high reliability. While cost and capacity may also be important, these are not the overriding decision criteria. For such applications, a hard drive must be able to handle heavy workloads with best-in-class reliability and solid performance. Without these characteristics, hard drives used in such applications will cause significant performance problems, slowing the ability of a business to perform core functions.

Optimal data centre durability

For online analytical processing (OLAP), high-performance computing, high-reliability cloud storage and RAID configurations, the considerations for a hard drive are slightly different. In these scenarios, durability is critical. Workhorse functionality and a workload capacity far beyond that of a standard desktop drive is crucial, along with high capacity and superior reliability. High-availability storage arrays, such as RAID, along with applications such as data warehousing, data mining and performance computing, as an example, require high capacity without compromising on reliability and workload capability.

Hard drives for scale-out architecture

When it comes to bulk cloud storage, on the other hand, as well as enterprise Network Attached Storage (NAS) architectures, big data, replication-based distributed file systems, back-up and archiving, requirements are again different. In these instances, scalability is the key, and the right combination of capacity, reliability and workload capacity for such scale-out architectures is vital. Deployments that require enterprise-class features, but can withstand lower performance and reliability in order to gain enhanced cost effectiveness, have very different considerations.

When it comes to data centres, both traditional and cloud-oriented, the hard drive technology supporting the data is essential. Choosing the right building blocks to form the foundation of a data-driven enterprise will ensure optimal performance and efficiency from the technology that supports the business of today.

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Sales Manager at WD South Africa

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