

EVOLUTION OF STORAGE MEDIA TECHNOLOGY

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ABSTRACT

Technology has always played an incredible role in evolution of knowledge storage media from the very starting punch cards to this flash drives and from kilobytes to terabytes. The evolution of storage included from the standardization of storage devices i.e from large trunks of kilobytes storage media to very small microchip having the good storage capacity of gigabytes. However, during this paper we'll check out evolution of storage devices from mag tape, magnetic drum, DRAM, FLOPPY's , CD's, DAT, DDS, MOD, , Micro drive, Multimedia Card SD card, Cloud backup solutions. Finally, during this article about evolution about storage devices, we'll check out an assessment providing solutions for tiered storage solutions and its development with reference oracle, netapp tiered storage solutions and storage supported present storage trends.

KEYWORD

Holographic,Ethernet,broadcast

OBJECTIVE

After looking into all the prospective over the storage media briefly will have a detailed discussion over each storage model and it evolution.

INRODUCTION

As per the necessity of today's Business strategies the need for data storage has increased tremendously compared to past five years and to mitigate the prices over storage of knowledge, it's been segregated and designed as structured, semi-structured and unstructured data and that they are stored. because the data is taken into account officially as corporate assets, there has always been attacks that are more vulnerable. Therefore, data hardening has been an enormous challenge but still many third party companies are working towards its excellence. Few measures

which are considered under the improvisation level are SAN, Fiber channel over Ethernet , Internet protocol, Converged Network Adapter (CNA) etc. The storage network technology within the datacenters has been developed into many various configurations, which are DAS (direct attached storage), NAS (Network attached storage), SAT (Storage area networks). In further section we'll look this structures with far more details. Here we'll have an in depth discussion over each storage model and it evolution.

MAGNETIC TAPE:

Magnetic tape is a medium for magnetic recording, made of a thin, magnetizable coating on a long, narrow strip of plastic film. It was developed in Germany in 1928, based on magnetic wire recording. Devices that record and playback audio and video using magnetic tape are tape recorders and video tape recorders respectively. A device that stores computer data on magnetic tape is known as a tape drive.

Magnetic tape revolutionized sound recording and reproduction and broadcasting. It allowed radio, which had always been broadcast live, to be recorded for later or repeated airing. It allowed gramophone records to be recorded in multiple parts, which were then mixed and edited with tolerable loss in quality. It was a key technology in early computer development, allowing unparalleled amounts of data to be mechanically created, stored for long periods, and rapidly accessed. The Videotape recorder which used magnetic tape allowed TV stations to gather news, timeshift and record content without having to use or develop relatively expensive and single-use film stock while allowing for the tape to be reused.

Magnetic drum: it had been direct access memory device, which was metallic cylinder, which was coated by a cloth called magnetic-iron-oxide. The tracks recorded on the cylindrical device were stored in channels and it had been capable of holding 200 tracks were the drum wont to rotate at 3000rpm. But still it had a drawback which is that they weren't ready to store an

excessive amount of knowledge. DRAM (dynamic random access memory): it's a medium that's been used to store the memory temporarily and it's been used widely in today's computer systems. It's made from small capacitors and transistors. DRAM has many cells and every cell is adequate to a touch. The cells on DRAM are organized in rows and columns. Today's computers use these cells in megabyte modules.

FLOPPY'S

It's personal computer storage disks where data might be handled easily. They're more fragile, low cost. It had been highly dispensable for the people performing on their personal laptops and other processors. It poses a capacity of 250kb to 1.6 mb so it varies on the dimensions of the disk.

CD's, DAT, DDS, MOD, Multimedia Card, Micro drive, SD card were subsequent generation storage medias. CD-ROM was highly wanted to save and retrieve the info immensely on the systems. DAT was the digital recording tape, which was actually released by the Sony in 1987. The most advantage is that the data is recorded digitally rather than in analog style. But in comparison to CD the performance of DAT is higher and advanced. Micro drives approximately called flash drives are portable storage drives wanted to transfer bit data in no time and efficiently then on still the storage media has always been improvising till this holographic storage formats and still happening giving out the services.

EVOLUTION OF TECHNOLOGIES IN STORAGE SERVICES:

SAN (storage area network): it's a high-speed network for the storage devices, which might be connected to the servers. The most advantage of SAN is it provides great assistance in backing up the info and disaster recovery. SAN uses fiber optic cable in order that the info transfer rate from one location to different location are going to be high. Fiber channel over Ethernet : it provides an excellent solution for the organizations possessing parallel network infrastructure issues. Fiber

channel gives a high-speed data transfer protocol serially and standards for enterprise grade storage solutions, the transfer rates are often up to 10gbs. Fiber channels operate at great speeds like 4,16, 32 gb/s , but generally in IEEE 802.3ae standards the space supported for 10GB Ethernet is 10km. so it's highly privileged in datacenters. Internet protocol:[6] it's group or singular drive which are combined together but they're not a part of storage network but considered to be more over the interior storage media on personnel laptops. NAS (network-attached storage): offers high-level storage solutions in file sharing services because the architecture is directly connected to LAN. However, due to these characters in NAS it synchronizes hardware storage resources into network, so it are often wont to develop multiple networked services and by doing this storage utilization is extremely efficient. So supported the above technologies the storage solutions are improvised but still there many technological labs still performing on improvement on the performance, reliability then on.

STORAGE MEDIA SOLUTIONS:

We will further discuss and present an assessment on tiered storage media solution on any top two company's depended on any context of the data at any particular time. We will be taking Netapp tiered storage solutions and Oracle tiered storage solutions.

TIERED STORAGE SOLUTIONS:

TechTarget (2005) the storage solutions are to segregation of knowledge supported the company-defined policies to scale back the value effectiveness of the info. The segregation may include different categories like performance, usage, security then on. Tiered storage consists few different tiers like tier 1, 2 and three data. Tier 1 includes sensitive data so data isolation is main aspect hence they're stored in expensive media solutions. Tier 2 data will contains type two classified files therefore the storage media expense is reduced. In Tier 3 it consists of unclassified data the expenses are very less because the data is stored in in less costly media.

ORACLE TIRED STORAGE SOLUTION SERVICE:

Oracle optimized solutions (2015) the most aim of oracle tiered solution is to supply highly efficient scalability and adaptability for the info. An always-new data storage trend was needed for better storage efficiency. because the data grows there was a chance arising for brand spanking new wave lengths, supported this aspects oracle offered optimized tiered solution to guard data also, lower cost for storage and large scalability. [3] providing Oracles disk and tape storage systems for better performance than many other storage media Introducing Oracle Storage tek modular tape gives a high throughput at lower cost and Oracle e Hierarchical Storage Manager provides configurable filing system view and policy based management and data protection. They predicted that reduced deployment provides additional savings. Reduced data risk thanks to pretesting, ensured access and data integrity. they supply higher quality of the info availability and integrity. Oracle applies all the tiers for the info storage solutions supported the client requirements. Oracle's StorageTek T10000D offers outstanding bit error rate. it predicts that it offers 12.6 times better TCO than EMC isilonn soln.

NETAPP TIRED STORAGE SOLUTION SERVICE:

NetApp (2012) has great views towards the optimizing storage efficiency and performance. the most solution they provide is, the proper data at the proper time at the proper cost. Netapp provides a really different and unique way of solution for storing the info with an automatic way of approach. The virtual tier provides a true time response to most of the demanding applications, ability to consolidate the info others tiers whenever required, conducting data cloning and SSD technologies. Basically provides reduced power -cooling – storage. The key advantage of Netapp services provided for storage infrastructure are going to be the self-managing data-driven service layer. It helps mitigating the prices supported the performance for the classification of the info. the main feature to assist the performance of the workloads would be the Netapp Flash Cache PCI-e-based modules. The workloads are just like the file service

workloads and OLTP workload etc... When storing data within the cloud, tiering allows users to optimize different storage types, moving the info between tiers for specific benefits, whether it's faster performance or optimized costs. While there are native options for tiering data within the public cloud, Cloud Volumes ONTAP allows users to automatically and seamlessly tier between object and block storage, which optimizes costs

CONCLUSION

We initially discussed about the evolution of the storage media because the time it had been integrated including the storage architecture. We even took a quick review about two companies' providing storage services which are oracle tier storage solutions and netapp tier storage solutions. we actually had a view how both the businesses mitigate the storage structure difficulties and supply a good range of solutions for the clients which may be a good prospective towards the event. The tiered storage solutions of every different vendors are competitive which indirectly supporting the event of the storage technologies. The tiered storage solutions describes the various levels of the storage entities set-up with different clients supported the worth of the info. So we conclude telling that the event of storage solutions has got to be far more improvised supported the need and developments.

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