

Information Technology Storage Plan

Jyoti Madabhushi

Tata Consultancy Services Ltd., Synergy Park, Non SEZ, Gacchibowli, Hyderabad, India

Abstract: *All the backups in the world are not useful to us at any point if we cannot recover the data. All the methods of backup we use need to be tested at pre-defined intervals and not just once in a week or once in a month. Disaster recovery testing and auditing of the data pools need to be done to be sure that the data is recovered when required. The data should be easily traceable when required and provide accurate information instantly. Security should be the first priority when managing data with IT (Information Technology) environment. Organizations in search of storage providers should pay attention to capacity, performance, availability and fault tolerance. Factoring in scalability, technology refresh and operating costs like power, administration, floor space and support renewal are few of the parameters to decide the type of storage required.*

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A storage capacity plan is used to forecast storage consumption, provide adequate levels of service to applications and set budgets accordingly. This plan is a vital component of infrastructure management. It is a forecast of storage resources needed to support application and business requirements. Storage capacity plans include growth parameters, key procedures for storage management and technology planning. A storage capacity plan is developed by establishing clear and measurable goals, assessing the high level parameters of a business such as growth, expansion plans, geographic factors and economic trends, assessing application service level and growth requirements, observing historical trends and forecasting storage requirements.

Not all data is created as equal. Some needs to be accessed frequently, some rarely and some is needlessly copied. A good place to start is tiered storage in which data is kept on high, medium or low end devices depending on how quickly one needs to access the data. Mission critical data can be stored on fast devices that have frequent or even continuous data protection backups. Data deduplication reduces the amount of capacity by eliminating multiple copies of the same file. If an email with an attachment goes out to 50 people, data deduplication software finds those 50 copies of the attachment and stores them only once on the server. The software points the attachment to a single copy of the file. File compression lowers the amount of required capacity though images won't compress as well as text documents. Virtual servers are easy to create, delete and move and their storage needs grow rapidly and unexpectedly. Storage capacity planning is the process of understanding how much storage is available, where it is, how to divide it between the various applications and users that require it and how to maximise utilisation.

With the growth in importance of storage and its growing technological diversity along with increasing demand being placed on it especially by virtual machines, the need for storage capacity planning is increasing. A physical server has natural physical limits, to increase its capacity, one needs to buy more memory, storage and CPU or a whole new server. A virtual server has none of these limitations and can quickly scale up and down as demands change. Storage capacity planning can help decide not just how much but what sort of storage is needed and where best to deploy it.

Capacity, throughput and I/O loads help understanding and determining what protocols, redundancy protection needs to be implemented. Identification of issues could point towards the need for eg. to change drive types or RAID configuration to be used, to reroute some data or simply add disk capacity at a faster rate. Further steps include developing warning and critical thresholds, which define the upper levels of I/O and capacity utilisation at which performance starts to become constrained. This will vary by workload and application.

Storage capacity planning tools should be able to aid these processes by modelling multiple what-if scenarios, taking into account not just today's usage patterns but also future deployments of new technologies during the next budget cycle. The key benefit of storage capacity planning tools is that they should help reduce or contain costs by avoiding or overprovisioning and providing actionable intelligence that is easier to use than building spreadsheets which, in a virtual environment containing hundreds of servers can quickly grow to become complex and large. Changes in the ways employees collaborate and communicate and more access to greater amounts of information enable businesses to improve agility from product development to customer responsiveness. In the past, a few crucial database applications, user file shares and email systems comprised the company's most valued data. In today's world, valuable data resides in external cloud, shared services and user's personal devices. Knowing where data resides, providing secure ways to store and share it and being able to report on usage wherever the data may be will keep storage administrators relevant. Success in an information-centric age means that storage teams must do more than manage capacity. IT leaders and storage administrators must setup to the challenge of working with the business to provide information about data, driving administrators from their comfort zone to expanded influence.

References

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Author Profile

Jyoti Madabhushi, B.E, M.S. has got more than 25 years of work experience in IT industry with more than one and a half decade experience in project management. She has worked in various capacities from being a hands on technical person to project manager, program manager, portfolio manager to strategic business unit head mapping her portfolio to the changing trends in IT.