Part of a series on carbon management

Managing storage growth

Streamline data management policies and improve energy efficiency

What's the carbon management issue?

The accelerating growth in data volumes is becoming a major cost and management issue for organisations across all industry sectors. Growth in data may be driven by a corresponding growth in business activity, but even businesses that stay the same size are likely to generate more and more data each year. For example, as organisations adopt new business intelligence technologies, they are likely to need to store larger volumes of transactional data for longer periods. Equally, maintaining compliance with new local and international regulations may require the retention of data over very long timescales.

With more data being retained for longer, the storage infrastructure in your organisation is probably already growing – and the trend looks set to accelerate. Not only will there be more and more equipment in the data centre – both disk and tape storage – but also more personnel and a larger administrative workload. All of this additional equipment and manpower is likely to translate into a significant growth in your organisation's carbon footprint – as well as a major drain on profitability.

As your storage infrastructure grows, it will consume more electrical power and generate more heat – requiring you to use even more power to drive air conditioning. What's more, much of the data you store is likely to be of limited value to the business. In the typical organisation, there is a significant degree of duplication of data, and much of what is being stored may well be dormant, inaccessible or outdated. In a nutshell, your business may be paying increasing amounts to store data that delivers relatively little return – and increasing its carbon footprint to boot.

As data volumes continue to grow, the tendency is for the complexity of the storage infrastructure to rise, further complicating attempts to draw business value from the data. Of course, regulatory requirements mean that it may be impossible to altogether eliminate the storage of old, low-value data. The challenge is to shrink storage requirements as far as possible yet still maintain regulatory compliance.

What's the solution?

Following a close examination of your existing use of storage and the policies and procedures that govern it, you may be able to discard large volumes of unused or duplicated data – thereby reducing storage requirements now and cutting the rate of future growth. Shrinking the data storage infrastructure may assist in the reduction of carbon emissions and reduce power consumption.

Only with a clear picture of the cost of data storage, the value of the data throughout its lifecycle, and the rate at which storage requirements are changing, can you plan a clear strategy for the future. Hardware accounts for a relatively small portion of storage costs, so this exercise must go beyond the infrastructure to look at data management policies, processes and administration. The aim is to ensure that the total cost and environmental impact of data storage does not outweigh its value to the business.

An audit of the storage infrastructure may enable your organisation to identify and eliminate duplicate or redundant data, and then to consolidate storage devices. In particular, by consolidating isolated "islands" of storage to a centralised storage area network, it is likely that you can significantly reduce the total disk capacity – and by extension the total power consumption and carbon footprint, as well as the administrative effort.

Storage virtualisation will also help to keep costs low and efficiency high, by enabling a single pool of disk storage to be shared between all enterprise systems and users. The result will be a smaller, greener storage infrastructure offering better performance and flexibility.

By taking a full-lifecycle approach to storage and adopting Information Lifecycle Management (ILM) principles, your organisation can more closely match the cost of data storage to the value of that data from creation to destruction. You can then introduce tiers of storage and automatically move lower-value data to lower-cost disk, or archive it onto offline tape, for a significant reduction both in costs and in the carbon footprint. Finally, by introducing automated policy-based data management tools, you may be able to eliminate unnecessary processes and manual administrative effort, simplifying and streamlining to create a more efficient organisation.

How to get started?

By engaging IBM to conduct a Storage Priority Assessment Consulting Engagement (SPACE) programme, you can commence the process of optimising your existing storage and plan for a more efficient, lower-cost future.

The IBM SPACE programme is designed to give your organisation the ability to handle current and future data storage requirements efficiently, economically and sustainably. IBM appreciates that hardware costs are likely to account for just a small percentage of your total storage costs. For this reason, the SPACE programme addresses the full spectrum of service attributes.

Using a structured methodology developed by IBM Global Technology Services, the SPACE programme provides a detailed analysis of the full lifecycle of storage management capabilities within your organisation. The study is vendor-neutral, takes three to five days to complete, and produces a prioritised action plan covering services, hardware and software solutions. By highlighting the gap between your existing storage management capabilities and your likely future storage requirements, the SPACE programme will help you identify and implement the right strategy for the future.

When the initial assessment phase is complete, the IBM Global Technology Services team will work with you to agree the prioritised action plan. The action plan will include key initiatives such as archiving, automation, virtualisation and data classification.

The IBM SPACE programme aims to create a more compact and efficient data storage infrastructure that will reduce your current carbon footprint significantly, and enable you to tackle future growth in data volumes without compromising on environmental issues. What's more, this greener approach to storage will go hand in hand with improved performance, quality of service and return on investment. Uniquely, IBM can provide every piece of the storage jigsaw, combining services, software and hardware to help your organisation achieve its energy efficiency goals for data management.

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