

White Paper

Deduplication and Compression

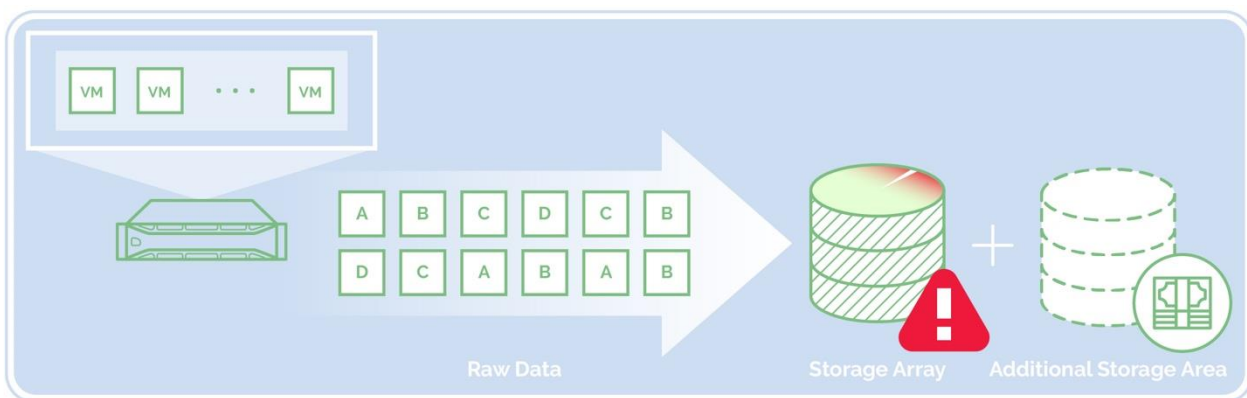
Introduction

The amount of data in virtualized datacenters is continuously growing, making VM-centric storage solutions increasingly expensive. Such circumstances create a challenge for vendors in developing storage that is capable of sustaining constant data growth and maintain desirable levels of performance. Due to various factors, the popularity and production of virtual server and desktop infrastructure offers have begun to explode, all-while forcing virtualized environments to store twice as much data as they had to in the previous two years. To deal with this out-of-control data growth, businesses require solutions that will deliver exceptional levels of storage efficiency effective capabilities at a reasonable price.

Problem

The exponentially growing amounts of data force modern IT specialists to increase the available capacity of their storage subsystem. This would usually mean adding more storage arrays or scaling up existing ones. However, such an approach is both impractical and inefficient: it only leads to heavily increased power consumption, not to mention the growth in other IT-related expenses across the board.

Although the developments in flash storage arrays are leading them to become the industry standard, they cannot keep up with the rapidly growing amount of data that is being siphoned through them. Such an aggressive way of writing data causes SSDs to wear out prematurely. It also increases the flash drive failure rate which is essential to flash arrays with high \$/IO and \$/TB ratio. The increasing amount of production data grows the size of backup infrastructure at an aggressive rate. More data business needs to store twice as much data on backup targets according to the 3-2-1 rule. New ways of using existing technologies are way overdue.



Solution

Instead of trying to reinvent the wheel, StarWind tries to make what is already there more effectively. To account for the above-mentioned challenges, StarWind Virtual SAN uses in-line deduplication using the industry-standard 4 KB block for optimal effectiveness and deduplication ratio. Then, it follows up with optional compression of the written data blocks.

By choosing StarWind VSAN, you acquire new ways of efficient and smart exploitation of the common storage resources that are already out there. Getting StarWind VSAN means:

- Forgetting about forced scaling up or out and enjoying minimized expenses thanks to having more available storage on existing arrays
- Less erase and write cycles thanks to less data being written which results in better flash storage utilization and flash cell lifespan
- High performance and uptime figures with reduced data capacity thanks to deduplication and compression combined with high availability

On another note, despite VDI scenarios' amount of overlapping data being close to 90%, contemporary conditions force the demand for them to rise. Luckily, StarWind VSAN can help solve the mentioned problem as well it can elevate the performance further by implementing in-memory computing.



Conclusion

Deduplication and compression of data before it hits the actual storage array allows StarWind Virtual SAN to dramatically increase the amount of usable, available on your storage. As a result, storage utilization is considerably increased. This forces the expenses necessary to operate your storage infrastructure to drop while making it possible to increase the flash storage lifespan cognizably

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