Western Digital.

Faster, More Reliable and Lower Cost Backups with Western Digital's Ultrastar® Data60 Storage Platform and Veeam Backup & Replication Software

VEEAM

Challenge

Customer's existing backup storage solution did not provide enough bandwidth and reliability for backing up its client applications data. Beyond certain data rates the backup storage appliances could not handle deduplication as required, leading to frequent failures with regards to the required backup time objective.

Solution

An 840TB[1] storage solution based on Western Digital Ultrastar Data60 storage platform and Veeam backup software.

Key Results

- Improved backup time without failures during deduplication
- Lower overall cost of backup solution compared to alternative solutions or upgrade of existing solution
- Easy path to a higher capacity backup solution via daisy chaining of multiple Ultrastar Data60 storage platforms to existing server

[1] Raw capacity. One terabyte (TB) is equal to one trillion bytes. Actual user capacity may vary due to operating environment.

Customer Profile

The customer is a European manufacturer of consumer household products, with manufacturing facilities in multiple locations in Europe and China. Their products are distributed in over 70 countries worldwide, resulting in revenue of over €500M annually. The company employs around 1800 people worldwide and has eight datacenters spread across the world. The backup storage described in this case study was used in the German datacenter, but as the Veeam Backup & Replication deployment progresses, more and more subsidiaries worldwide will replicate this configuration.

Backup Repository Replacement Needs

Growing data volumes, stemming from different client applications, reached a point where it overburdened the existing backup infrastructure. Beyond certain data rates the backup storage appliances could not handle deduplication as required, leading to frequent failures within the required backup window.

The IT department realized that upgrading the existing solution was too costly for the perceived benefits, and would also not provide enough headroom for future capacity growth. They concluded that a change in architecture was needed.

The IT team searched for a straight forward solution without complicated features and/or complex architectures, providing a maximum available net storage capacity with high reliability. They looked at a variety of solutions, ranging from individual NAS appliances per department to larger systems servicing a whole company branch office. Unfortunately, none of them provided the cost/performance ratio they were after.

High Capacity, High Reliability Backup Repository

The customer eventually chose a backup solution based on Western Digital's Ultrastar Data60 storage platform, managed by Veeam Backup & Replication Veeam Backup for Microsoft Office 365 and Microsoft Windows Storage Spaces (part of Windows Server 2016).

The configuration consisted of one HPE Proliant DL360 G9 server, equipped with two Broadcom 9480–8i8e MegaRAID® controllers, catering to each IO-Module of the Ultrastar Data60 storage platform. One 4-lane miniSAS HD cable was connected between each RAID controller and the assigned IO-Module port, providing a bandwidth of up to 9.6GB/s per controller.

The Ultrastar Data60 storage platform was deployed with 60x 12TB SAS HDD drives, providing a total backup repository of 840TB. The Ultrastar Data60 was logically split into two zones of 30 drives each via T10 zoning, such that every controller saw the drives assigned to their specific ports only. Within the groups of 30 drives the IT team created several stripe-sets, which were grouped into one large storage volume by Windows Storage Spaces.

"We wanted something that was simple, easy to maintain, but also provide us with a possibility to grow our future backup capacity needs, without breaking the bank".

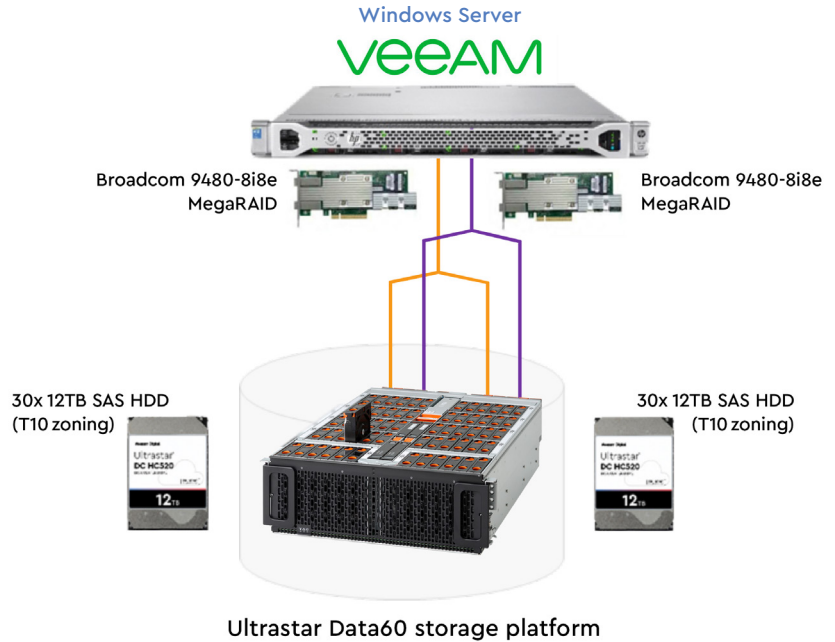Manager Architecture and Infrastructure Solutions

Configuration

- 1x HPE Proliant DL360 G9 with Veeam backup & replication Veeam Backup for Microsoft Office 365 and Windows Storage Spaces
- 2x Broadcom 9480–8i8e MegaRAID controllers
- 2x 4-lane SAS mini cable, between each I/O module and Ultrastar Data60

Backup Repository

- 1x Ultrastar Data60, equipped with 60x 12TB SAS HDDs

One of the volumes served as the target for incremental backups, while the other volume held the full backup image. The full backup images were compressed by the Windows Server deduplication feature.

Ultrastar Data60 storage platform

Ease of Installation

The physical installation was easy. At just 712mm chassis length, the Ultrastar Data60 storage platform was an optimal fit for the customer's existing racks. Additionally, the number of supported HDDs was enough to satisfy the storage demand foreseen for the coming months. As capacities increase, it would be possible to operate up to four Ultrastar Data60 storage platforms in a daisy-chain configuration without changes on the server side.

Lower TCO with faster backup time

The IT team was now able to run all required backups within the allotted time window in the most cost-effective way. A dedicated backup appliance with internal deduplication would have cost much more in comparison to what eventually was spent on the servers, RAID controllers and the Ultrastar Data60 storage platform. In fact, the maintenance update and the space upgrade that was needed with the original solution, was as expensive as buying a new Ultrastar Data60 storage platform and HPE MSL 3040 LTO8 tape library.

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