SOLUTION BRIEF

Western Digital and SUSE Deliver Flexible, Easy-to-Manage Ceph Storage

Highlights

- **Transform storage economics** with flexible software-defined storage—without the complexity or vendor lock-in.
- **Adapt and scale capacity as needed** to meet today's and tomorrow's most demanding data driven requirements.
- **Control long-term costs** with a supported, open-source scale-out storage solution that becomes more efficient as it grows.

Challenge

- **Exploding storage requirements** add costs and complexity.
- **Inflexible legacy solutions** cannot keep pace with changing needs and ever-growing scale.
- **Open-source Ceph solutions** are often complex to design and deploy.

Solution

- **SUSE Enterprise Storage** delivers the benefits of open-source, distributed SDS without the complexity and risk.
- **Western Digital® Ultrastar® platforms** provide a reliable, x86 based, density-optimized foundation for scale-out Ceph environments.
- **Western Digital and SUSE** provide a flexible solution architecture for block, file and object that will keep pace with growing storage requirements and provide a lower TCO when compared with traditional storage vendors.

Massive Data Volumes Create Problems That Legacy Solutions Can't Solve

Organizations that generate hundreds of terabytes, or even petabytes of data face many challenges relating to growth, scale and access. Traditional file and block storage architectures no longer meet their needs. Legacy offerings based on purpose-built appliances with custom software may have made sense in the past. Today, they are too inflexible to adapt to changing, sometimes unpredictable data demands, and become cost-prohibitive to manage and maintain as data volumes reach multi-petabytes and beyond.

There is a trend towards implementing software-defined storage (SDS) environments, combining open-source scale-out file systems like Ceph with industry-standard server hardware to address these challenges. However, many organizations find themselves choosing between proprietary implementations (which lock them into one vendor's pricing and ecosystem) or designing and building their own open-source Ceph environment—and taking on the complexity and risk that comes with it. Additionally, while Ceph can run on most platforms, not all have been designed to support next-generation scale-out environments. Reliability and performance issues can quickly dilute the benefits that organizations are keen to exploit.

Transform Storage Economics

Today, two industry leaders, SUSE and Western Digital, are teaming up to make implementing Ceph storage environments simple, scalable and cost-effective. With SUSE Enterprise Storage, you gain the flexibility of open-source SDS with the industry's premier management—without vendor lock-in and without the complexity of designing, architecting and supporting the solution yourself. And, you can now deploy Ceph on Western Digital Ultrastar platforms, the industry standard for storage reliability and TCO. Combined, you can implement a scale-out architecture that becomes more efficient as you scale.

Reduce Complexity, Risk and Costs

Enterprises with the most challenging storage demands turn to SUSE Enterprise Storage not just to reduce costs, but to manage growth, simplify administration and provide scale-out performance. With SUSE Enterprise Storage, you can adapt your environment as needed, without the cost and complexity of systems that tightly couple custom software to proprietary hardware. At the same time, you benefit from enterprise-class management and support, without locking you into a vendor's proprietary ecosystem.

SUSE Enterprise Storage provides:

- **Unlimited scalability** with a distributed storage cluster designed to scale out to thousands of nodes and multi-hundred petabyte environments and beyond.
- **Low total cost of ownership (TCO) for the largest storage requirements,** with a solution that becomes more cost-efficient the more storage you deploy.
- **Total flexibility** with a software-defined solution that can easily flex capacity for different storage tiers and continually adapt to changing needs.
- **A single, unified SDS cluster** that provides applications with object, block and file system storage, providing universal access to legacy and modern applications.
- **Erasure coding and replication**, allowing you to define custom settings for advanced levels of data protection.
- **Self-healing capabilities** to minimize storage administration and optimize data placement, maximizing system resiliency and availability.

A Higher Standard for Storage Innovation, Reliability and Cost

Western Digital Ultrastar platforms provide the ideal foundation for scale-out SDS solutions like SUSE Enterprise Storage. Each platform is built to deliver the following attributes:

- **Innovation:** Ultrastar platforms draw on more than 40 years of Western Digital innovation and one of the most powerful patent portfolios in the industry. This vertical innovation, unique to the industry, allows us to incorporate decades of design experience with flash and hard disk drive (HDD) technologies into our storage servers and JBODs—and deliver these to our customers more quickly, frequently six to 12 months ahead of the competition.
- **Reliability:** When you need maximum density to manage data growth and contain costs, Western Digital delivers. Ultrastar JBODs feature IsoVibe™ vibration isolation and ArcticFlow™ thermal zone technologies that reduce vibration, improve cooling, reduce power consumption and have been demonstrated to reduce drive return rates from the field by 62%.*
- **Low TCO:** Western Digital designs and manufactures devices end-to-end. By owning the entire vertical stack for our solutions, and configuring and selling them directly to global distributors, we've cut excess layers from our supply chain. This allows us to offer state-of-the-art innovation and enterprise-class reliability and performance, with reduced hardware acquisition costs and lower overall TCO for our customers.

Inside the Solution

Combine Western Digital Ultrastar platforms with SUSE Enterprise Storage to meet diverse storage requirements. You can create efficient scale-out environments optimized for storing unstructured data using multiple Ultrastar Serv60+8 hybrid storage servers or you can build a higher-performance environment for block-based requirements focused on tiering, using multiple Ultrastar SAS interface JBODs connected to industry standard servers.

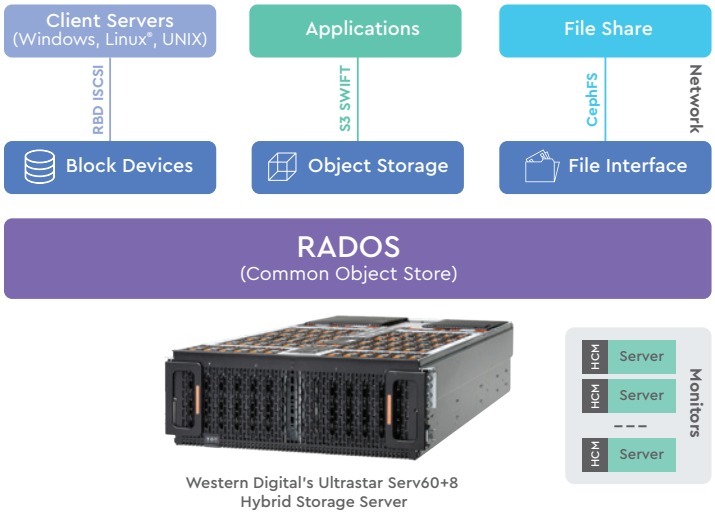

Figure 1: SUSE Enterprise storage on Ultrastar Platforms

Conclusion

As your organization continues pushing the boundaries of what's possible, you can expect your data volumes to continue to grow. That doesn't mean your management complexity and cost-per-terabyte have to as well. With scalable, cost-effective software-defined storage from SUSE and Western Digital, you can meet today's data challenges and be ready to tackle whatever new ones the future may hold.

IsoVibe

IsoVibe™ Vibration Isolation Technology

Precise cuts in the baseboard provide a suspension for the drives in the chassis, isolating them from transmitted vibration. The result is that consistent performance is maintained, even when all the drivers are working hard.

ArcticFlow

ArcticFlow™ Thermal Zone Cooling Technology

By Introducing cool air into the center of the chassis, drives operate at lower and more consistent temperatures than conventional systems. This results in lower fan speeds, reduced vibration, lower power consumption, quieter operation and ultimately higher reliability.

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