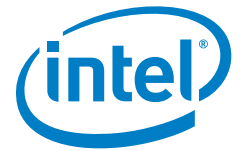


SOLUTION BRIEF

Intel® Xeon® Processor
DataSphere™
Software-Defined Storage



Dynamically Align Storage Resources with Evolving Business Demands

DataSphere places the right data, at the right place, at the right time to maximize storage utilization and efficiency.

DataSphere overcomes the storage silo problem by automating storage resource allocation.

Data drives modern business, but today, most companies have no idea what data is active and hot, or what data is cold and stale. In addition, moving data is complex and expensive, so data stays where it was first stored for years. Despite the specialized capabilities of modern storage, without the ability to know what data requires, and no ability to move it, companies' storage systems end up being excessively over-provisioned. With capacity utilization rates ranging from 20-60%¹ and \$10 billion dollars spent quarterly² on storage, companies are overspending on over-provisioning by \$4-8 billion dollars each quarter.

The Primary Data DataSphere platform eliminates storage silos to maximize the value of every enterprise organization's diverse storage resources. This provides data virtualization that enables enterprises to automatically optimize storage resources with dynamic data mobility across different storage types. With DataSphere, IT leaders can manage increasing business demands under-budget—even with potential hindrances that result from limited staff—to optimize their storage investments.

Overcome Storage Silos to Put Storage Assets to Work

DataSphere overcomes the storage silo problem by automating storage resource allocation. This involves seamlessly aligning storage resources to evolving business demands. Data movement is automated by initiating policy that places data in the right storage environment based on business needs, and actual usage.

This allows enterprises to manage storage as global resources, instead of disparate systems, to enable greater improvements in data center resource utilization, while dramatically reducing capital and operating costs. DataSphere makes it possible for enterprise IT to meet modern business challenges with existing storage, while staying on budget in a way that scales to support future growth.

BENEFITS

- **Flexibly meet diverse data demands** by making storage services globally accessible to all data
- **Adapt with agility to changing business needs** with intelligent data mobility
- **Cut costs** by both reducing overprovisioning and extending life of assets
- **Simplify management** with policy-driven Smart Objectives
- **Increase uptime** with nondisruptive data mobility
- **Scale performance and capacity** without interrupting business

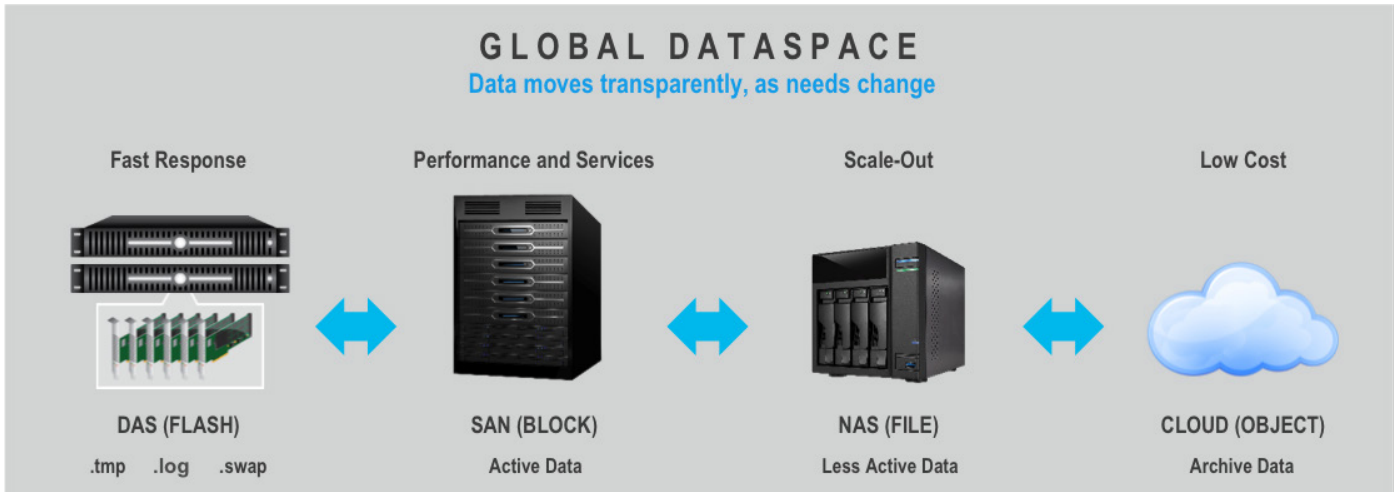


Figure 1. Automate data placement according to objectives.

Real-Time Data Analytics with DataSphere on Servers with Intel® Xeon® Processors

The Primary Data DataSphere platform couples Intel® Xeon® E5-2640 v3-based servers with multiqueue parallel Intel® DC 3600/3700 Series SSDs. DataSphere virtualizes data to transparently connect storage infrastructure from any vendor, media, or protocol under a single, global data space. This allows data to easily move between server, shared, and cloud storage, according to objective-driven policies.

Data center servers with Intel® DC 3600/3700 SSDs and Intel Xeon® processors deliver low-latency, high-performance capabilities that DataSphere requires for real-time telemetry and statistics gathering that enable enterprises to respond automatically to business changes. DataSphere uses these analytics to know what data to move, when to move it, how much to move, and which storage device meets data requirements.

Meet Diverse Data Demands

Rapid data growth and new enterprise data use cases have spurred a wave of innovation on many fronts, from Intel® DC 3600/3700 Series SSDs to flexible web-scale architectures on industry-standard Intel servers, to analytics platforms that give businesses fast and actionable insight, to object and cloud storage products that reduce the costs to store ever-increasing amounts of data.

Although each of these storage types and platforms offers many benefits, they also trap data in silos that must be managed separately. DataSphere tackles the problem of maintaining multiple separate storage systems by eliminating storage silos altogether. This gives all data access to the full range of available services.

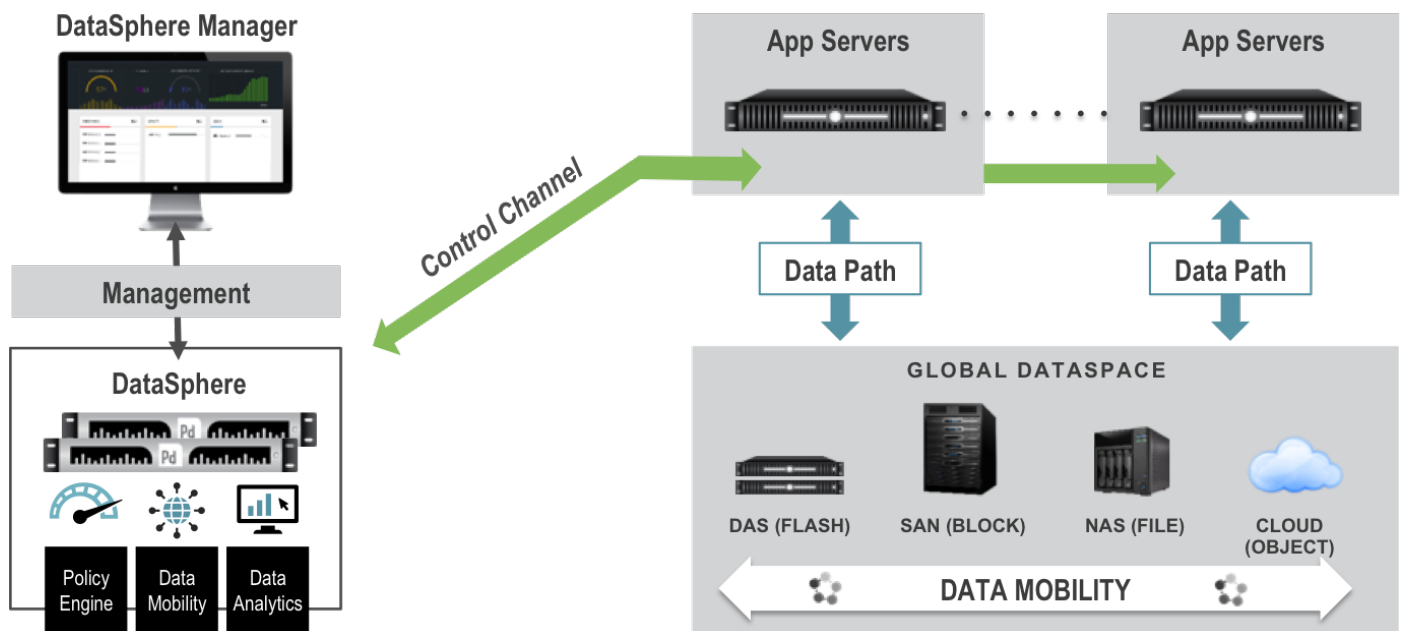


Figure 2. DataSphere out-of-band control path accelerates control operations and data access.

DataSphere also delivers high performance and massive scalability through an architecture that places the control path out-of-band from the data path. This accelerates both control operations and data access. Control operations run on flash on a dedicated server, while data access functions freely independent of I/O traffic from metadata operations.

Keep Storage a Step Ahead with Automated Agility

Storage silos are a root cause of data center inflexibility. Whether data is being promoted from development into production, upgraded to a higher-performance storage system to support new workloads, or essentially archived to more cost-effective storage, the process of moving data between storage types without affecting business is expensive, time-consuming, and laborious. While it is crucial for enterprises to have agile data centers that adapt quickly to changing demands, doing so on legacy infrastructure presents a big challenge.

DataSphere delivers storage agility by moving data across different storage types—not within a single, proprietary appliance—to meet shifting business demands. Smart Objectives automate mobility as data grows hot or cold, without disruption to business operations. Smart Objectives can also nondisruptively move data of specified file types to the right storage, based on policy. When these actions happen automatically, expensive data migrations become history, and IT can focus on other strategic tasks that add more value to the business.

Increase Infrastructure Utilization to Reduce Costs

The cost to support the data sprawl that results from growing and maintaining an enterprise of different storage systems is enormous. Solutions that do not solve the storage silo problem cannot effectively slow the sprawl that increases data center costs. In fact, since many of these solutions are deployed on proprietary hardware, many enterprises might find costs actually increase as they scale performance and capacity.



1. Avoiding Costs from Oversizing Data Center and Network Room Infrastructure, White Paper, Schneider Electric, 2012. http://www.apcmmedia.com/salestools/SADE-5TNNEP/SADE-5TNNEP_R7_EN.pdf?sdirect=true
2. Traditional Year-End Purchasing and Continued Expansion of Hyperscale Datacenters Drives Fourth Quarter Spending on Enterprise Storage Systems Up 7.2%, Press Release, IDC, Mar 2015. <http://www.idc.com/getdoc.jsp?containerId=prUS25451215>

Intel® technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com/storage.

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DataSphere protects the end-user experience while greatly reducing data center costs. Most data access follows the Pareto principle, meaning **20 percent of the data attracts up to 80 percent of the access**. By moving less-active or inactive data off the enterprise's most expensive and often most overprovisioned storage resources, DataSphere can free significant valuable capacity to deliver an immediate ROI. DataSphere also dramatically cuts operating costs by reducing IT overhead for upgrades and migrations, and the cost to grow data center floor space and power. In addition, the storage-agnostic DataSphere architecture gives enterprises the flexibility to choose the best storage, at the right price point, when it is actually needed. Finally, DataSphere delivers scaling of performance and capacity across all storage types, including industry-standard Intel-based servers, which makes future growth predictable and easier to budget.

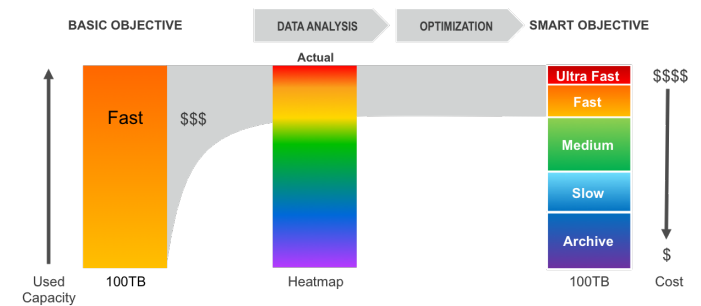


Figure 3. DataSphere distributes data cost-effectively.

Enterprises have plenty of storage. What they need today is a better way to manage the diversity of their storage assets. DataSphere is a storage-agnostic platform that leverages the intelligence of virtualization to give enterprise data centers the ability to meet diverse data demands. With DataSphere, companies can automatically align storage resources to changing business needs to maximize existing and future storage investments across the enterprise.

To learn more about Primary Data, contact a Primary Data representative:

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To learn more, visit intel.com/storage.