

# Rethinking How Data Is Managed

## FreeStor<sup>®</sup> - Software Defined For Everything Oracle

Modernizing can be costly, risky, disruptive, and time-consuming. Vendor lock-in is bad, be that lock-in software or hardware. Forklift upgrades are worse; not only are they expensive, but they're disruptive to operations as well. Enterprise storage has traditionally been an example of the worst aspects of both. FreeStor is a true Software-Defined Storage (SDS) platform that offers a viable escape without abandoning existing investment.

FreeStor is more than just a traditional storage gateway virtualizing existing storage. FreeStor is scalable and tightly integrated with the storage devices it controls. It is performance-optimized for major storage products, including Oracle's FS1. This allows FreeStor to get the maximum possible performance from new and existing storage infrastructure, enabling seamless migration even in heterogeneous environments. No more forklift upgrades. No more outages. Workloads go from A to B and back again as needed.

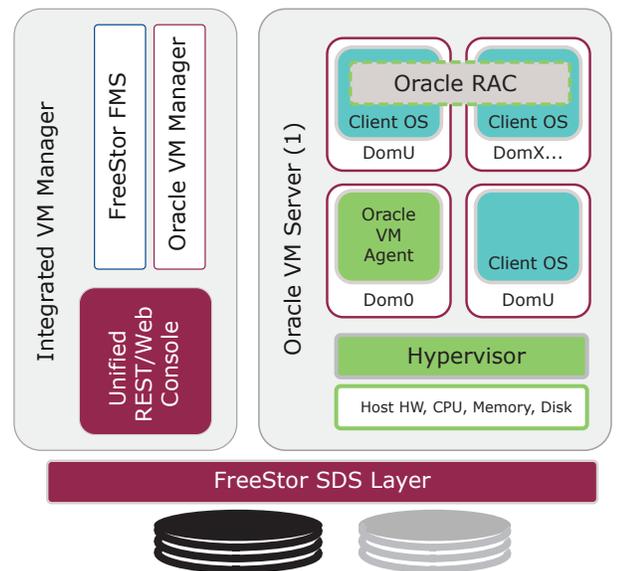
FreeStor also provides feature parity across all associated storage devices. Regardless of whether you are running a Netapp Filer, an EMC array or an Oracle FS1, all workloads running on all devices will have the same storage functionality. You can even run workloads in high availability on different storage devices from different vendors at the same time. FreeStor also provides a robust Virtual Tape Library (VTL). FreeStor augments Oracle DataGuard and works with the full range of Oracle's offerings, including Exadata. FreeStor's Continuous Data Protection (CDP) offers more rollback points than DataGuard alone. Application awareness as well as storage and management integration allow FreeStor to pick the right data protection solution for any kind of data, be that data in an Oracle database, a virtual machine, or any other data over which FreeStor is assigned control.

## Data Service Parity

FreeStor ensures you get the most from your storage hardware, no matter the vendor. Because FreeStor sits between servers and the storage they use, it is able to provide a full suite of enterprise class features, including site to site replication, deduplication, CDP and more, regardless of the underlying storage. That FreeStor works with all storage – both new and existing – is important. Datacenters don't spawn, fully formed, from the head of their designer.

Most are not turned off for upgrades every three years and then completely replaced. Datacenters continuously evolve, change and grow. The dirty little secret of the storage industry is that storage vendors aren't very good at migration. Migrating from one vendor's storage to another is usually a nasty, drawn-out affair involving prolonged outages, conversions and all too often unnecessary capital expenditure in the form of intermediate equipment. Even migrating from one generation of a vendor's storage to the next can feature some or all of the forklift upgrade pain.

Data Migration is a real world storage problem easily addressed by FreeStor. FreeStor offers the ability to easily move data between devices. This data can be array to array, site to site, cluster to cluster, and cloud to cloud or can be a many-to-one consolidation project. It can also be part of a storage tiering effort; moving tier one workloads to hybrid or all flash arrays while moving other workloads to traditional arrays and "cold" data like snapshots and backups off to tape or to the cloud. Continuous availability of data in heterogeneous environments is another key



use case for FreeStor. Consider for a moment an environment with both an EMC array and a NetApp array, where the storage administrator wants to be able to replicate data between the two devices. FreeStor lets the storage administrator do this. Two storage devices, for example an EMC array and an Oracle FS1, can be made into a single highly available storage cluster and presented to the server layer transparently as a single data source.

FreeStor can also address data resilience concerns by replicating data between sites. With FreeStor, it is possible to have a collection of different storage sources on site A replicate to a collection of sources on site B. It would also be possible to create a local active-active high availability storage setup that replicates to a remote active-active storage setup. In both scenarios the storage devices in question can all be from different vendors. It won't matter who the storage source provider is because data services are provided by FreeStor, not the storage source vendor.

FreeStor also has automated tiering that moves data to tape or cloud storage as needed (older snaps, etc.). It can also move high demand workloads to higher performing storage tiers such as all flash or hybrid arrays or demote lower demanding workloads.

## FreeStor® - Software Defined Storage With No Surprises

Today's challenges require a new, software-defined approach that eliminates vendor lock-in, proprietary platform silos, increased complexity, and lack of hardware and software compatibility. Only FreeStor addresses those challenges head on and delivers real value to help organizations reduce costs, eliminate silo's while providing real flexibility and freedom.



**ADAPT FASTER**  
Provision storage in 6 clicks - less than one minute



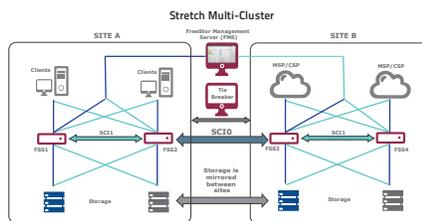
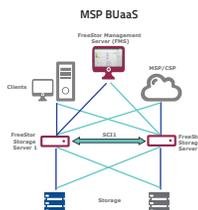
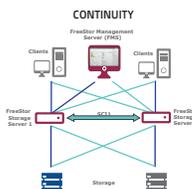
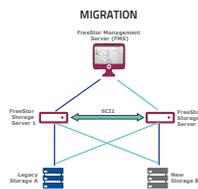
**LOWER YOUR COSTS**  
Pay up to 90% less than buying same features and capacity vs. array-by-array



**USE ONE TOOL**  
Single pane of glass for ALL storage; monitor, report and analyze from ONE tool



**NO SURPRISES**  
Track utilization and predict capacity to better forecast budgets and resources



### Technical Features

- **NEW:** Predictive Analytics across all storage resources
- **NEW:** Simplified Web UI w/ REST APIs
- **NEW:** SAP HANA Certification
- **NEW:** OpenStack Cinder Driver
- **NEW:** Smartphone apps for Android and iOS
- Next generation Intelligent Abstraction® layer
- Unified, centralized management, monitoring, and reporting via Web, tablet, and smartphone
- Improved Failover/HA (Active/Active)
- IO Cluster and IO Multi-Cluster (4-way)
- Over 1 million IOPS per IO Cluster using SSD
- Improved latency
- Inline block-level deduplication

### Technical Benefits

- Horizontal architecture with a single platform, and a single price
- Seamless migration of data to, from and across storage platforms
- Centralized management for enhanced simplicity
- Access the latest storage venues like the public/private/hybrid cloud, SSD and Flash

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